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SEPTEMBER 22, 2003 * VOL. 37 * NO. 38 * \$5/COPY

Ford Explores Switch to Linux-based Servers

Considers open-source as part of move to simplify infrastructure, but has no plans for desktop use

BY CAROL SLIWA

Ford Motor Co. is poised to join the ranks of large corporations that are exploring the use of Linux to replace some of their Unix-based servers, company officials confirmed last week.

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of Unix from Sun Microsystems Inc., Hewlett-Packard Co. and IBM. But it's considering more widespread use of Linux on Intel Corp.

hardware for some of its server-based applications, primarily because of the potential Ford currently uses versions | cost benefits, said George Surdu, director of global IT infrastructure at Ford.

"Do we believe Linux will have a home in Ford Motor Co.? The answer is absolutely yes," said Surdu. "Will it be the be-all, end-all for Ford Motor Co.? No way. But we are very encouraged and pretty excited about Linux in certain spaces."

Ford has no plans, however, to move to Linux on the desktop. The company recently signed a new three-year enterprise agreement with Microsoft Corp. covering its desktop operating system, Office applications and other collaborative technologies, according to Ford officials.

A Ford spokeswoman said it's possible that the company Linux, page 8

Sun Pricing Model Wows Users

Company offers line of back-end software for \$100 per employee

BY JAMES NICCOLAI SAN FRANCISCO

Some Sun Microsystems Inc. users were clearly intrigued by the new per-employee software pricing model the vendor announced last week, saying they plan to investigate the model with a view to saving money or at least getting their hands on some additional Sun products at no extra cost.

At its SunNetwork conference here, the company announced a radical plan to offer all of its infrastructure soft-

&A: World Book's CTO says nove e to Sun's per-employee r cle g was a no-brain r. Page 53

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un also unveited hardware,

ware products, including its directory, application and portal servers, in a bundle called the Java Enterprise System all at a fixed annual cost of \$100 per employee. The idea is to free users from having to Sun Pricing, page 53

Feds, Oracle Team Up to **Boost Security**

Vendors to be held more accountable for security of products

BY JAIKUMAR VIJAYAN

Five federal agencies, in collaboration with the Center for Internet Security and Oracle Corp., tomorrow will announce a broad federal procurement initiative to improve software security.

Under the initiative, software vendors will have to ensure that their software meets specific safe configuration re-

Cybersecurity, page 8







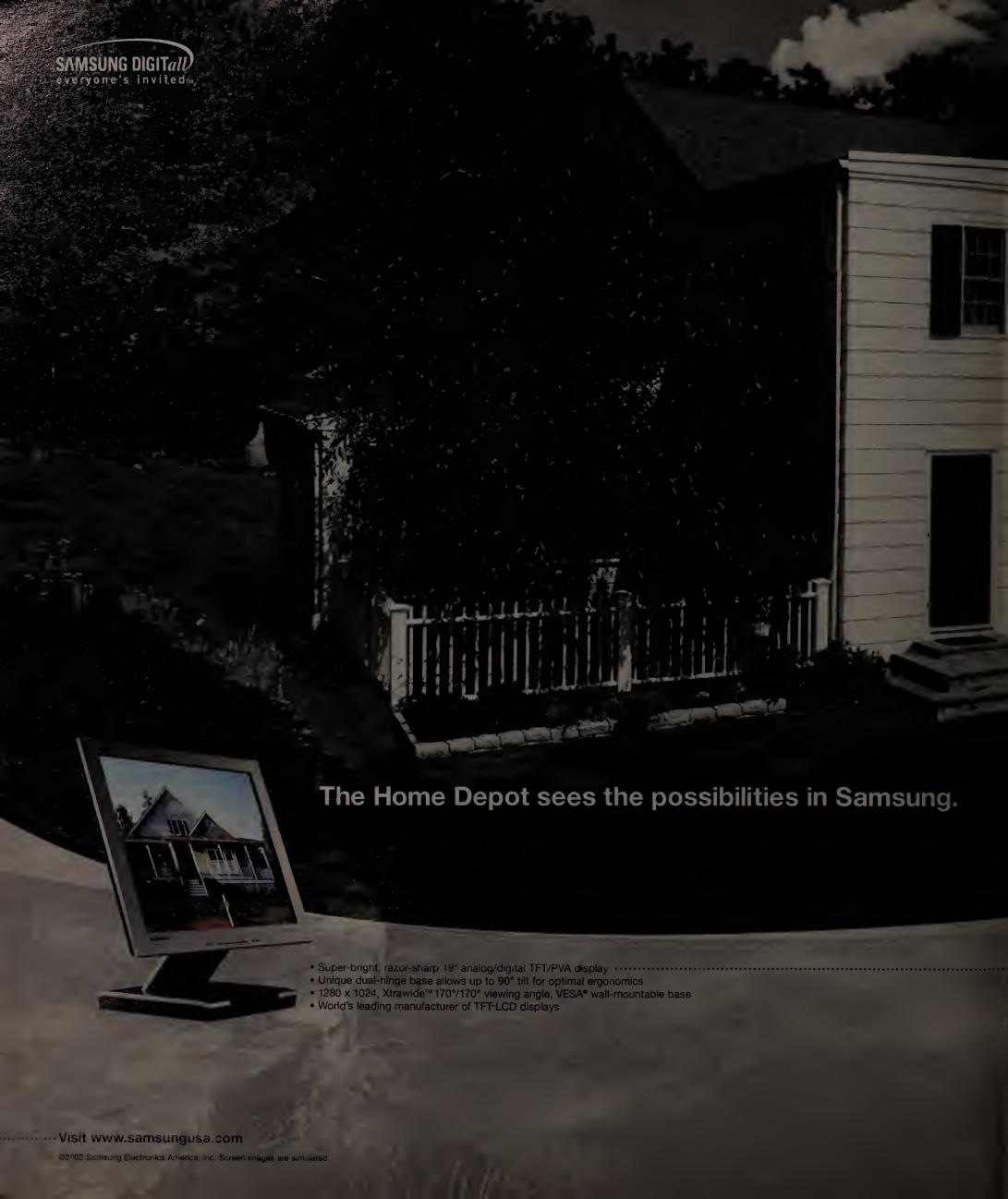
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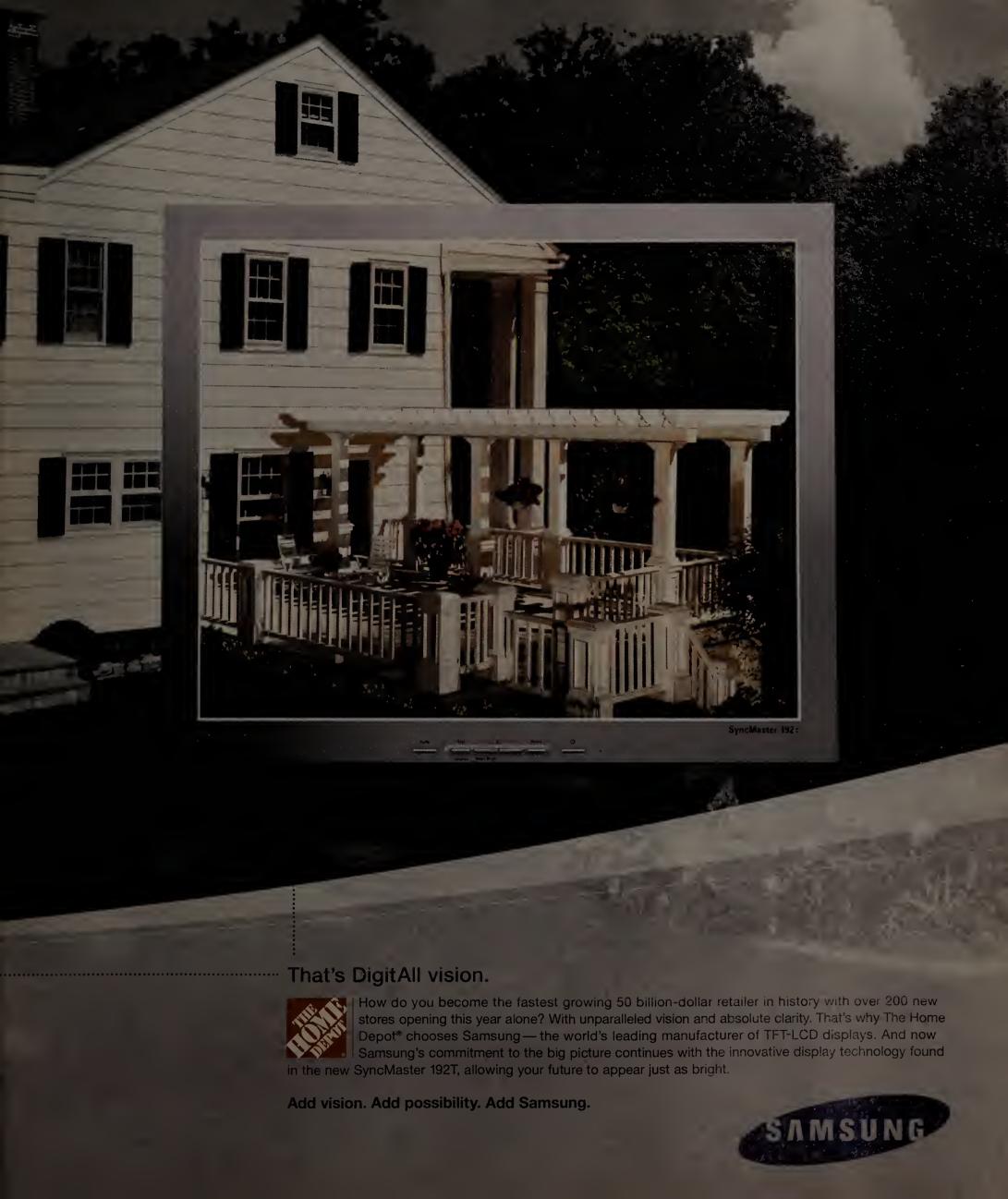
AWARDS 2003

What happens when vendors tune in to IT customers' needs?

They produce technology that solves real business problems, from quality-checking cor-

porate Web sites to helping the U.S. Air Force's 45th Space Wing reduce backup time from 14 hours to two. This year's 30 Innovative Technology Award winners listened to IT customers like those shown above - and delivered. Stories begin on page 25.







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11 Steps to Successful Outsourcing: A Contrarian's View

DEVELOPMENT: Outsourcing is being touted as the latest cure-all for cash-strapped development managers. Columnist Johanna Rothman has heard these claims before. She — reluctantly — sees a place for outsourcing in certain circumstances and offers tips on how to make it work. **QuickLink 41279**

Building an iSCSI SAN

STORAGE: Two storage experts from Intel outline the benefits of planning and implementing an iSCSI SAN. • QuickLink 41035

A Look at the Power Mac G5

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Sun Microsystems Inc. said it plans to cut about 1,000 jobs in a new round of layoffs that will reduce its 36,000-person workforce by 3%. The company added that it needs to make the cutbacks to meet financial performance goals in its current fiscal year. Most of the layoffs are due to take place this month, but Sun said some of its business units may not complete their cuts until March.

New Worm Takes Aim at Windows

Security software vendors warned of a new worm that targets Windows systems and is being sent within e-mail messages purporting to be Microsoft Corp. security bulletins. The worm, dubbed W32.Swen, exploits a flaw in Microsoft's Internet Explorer software and was designed to massmail itself after infecting systems. F-Secure Corp. in Helsinki gave Swen its highest alert rating.

Vendors Put Server Agreement on Hold

Hewlett-Packard Co. and Intel Corp. confirmed that they and other top vendors, including IBM and Dell Inc., postponed the planned announcement of an effort to set common programming interfaces, hardware interconnects and sizes for servers. An HP spokesman said the group hadn't vet reached an agreement "that outlines the scope and charter of this initiative."

Short Takes

CISCO SYSTEMS INC. said that Carly Fiorina, HP's chairman and CEO, will give up her seat on the networking vendor's board after its annual meeting in November. ... PALM INC. in Milpitas, Calif., reported a smaller-than-expected loss of \$21.7 million for its first quarter, which ended Aug. 29. Revenue totaled \$177.4 million.

ATDEADLINE IT Unemployment Hits Sun Plans to Cut 1,000 More Jobs 'Unprecedented' Level

Number of jobs has tripled since 1983, but recent cuts have hit programmers hard

FACTOID

of all native IT

workers were located

in California in 2002;

nearly a third of all

foreign-born IT work-

ers were in that state.

SOURCE: COMMISSION ON PROFES SIONALS IN TECHNOLOGY AND

BY PATRICK THIBODEAU

NEMPLOYMENT in the IT profession reached 6% this year, an "unprecedented" level for a career path that until recently was a sure way to a well-paying job.

That's the finding of a new study that also determined that foreign-born workers now | Dewayne Nelsen.

account for a fifth of all IT employees in the U.S.

The results of the study, conducted by the Washington-based nonprofit group Commission on Professionals in Science and Technology (CPST), mesh with what IT managers have

seen in response to helpwanted ads they have placed.

"I'm sure the number is 6% or higher," said Michael Russo, a data center manager at

Wyeth, a Madison, N.J.-based drug company.

A recent thirdshift job in the company's operational data center drew 168 applicants. "There are a lot of people who are out of work." Russo said.

Randy Rosenthal, manager of computer operations at Southwest Securities Group Inc. in Dallas, has seen the same trend: highly qualified people with multiple degrees applying for lower-level jobs that IT managers once had trouble filling.

"That tells me that 6% has hit the IT area pretty hard," Rosenthal said.

Two years ago, Salt River Project had an open position for an operations analyst and received about 15 applications. Last year, the Tempe, Ariz.based water and electric company posted a similar position and had 50 applicants. This year, the 800,000-customer utility has a hiring freeze, said operations manager

There was a sense of grim resignation about the report among some IT managers at a conference held here last week by AFCOM, an Orange, Calif.-based data center managers' user group.

Several IT managers, some

requesting that their names not be used, told of offshore outsourcing plans or data center consolidations that led to layoffs.

> In the future, automation improvements and the development of "self-healing" applications will also hurt some IT career paths, they said. The career advice from one IT manager was to

avoid the technical aspects of the profession and focus more on IT management.

Growth Spurt

IT unemployment rates were as low as 1.2% in 1997, shooting up to 4.3% in 2002.

But the overall number of IT jobs has seen remarkable growth, tripling in the past 20 years, according to the CPST, which conducts labor force and educational research for a range of scientific organizations and companies.

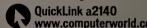
The IT labor force, which under CPST's definition includes computer scientists, systems analysts, software engineers and programmers, grew from 719,000 jobs in 1983

to 2.5 million at its peak in 2000. It has since declined by 150,000, with about twothirds of those lost jobs in programming, according to the organization.

The CPST report was sponsored by the Alfred P. Sloan Foundation and the United Engineering Foundation, an umbrella organization of engineering groups.

MORE ONLINE

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Experience Counts in Downturn

The high IT unemployment rate means managers have the luxury of hiring people with a lot of experience and at wage rates below what they may have had to pay several years ago.

You are able to attract or look for better experience, or more diversity of experience." said Bill Ginty, production support manager at CVS Corp. in Woonsocket, R.I.

Nate Viall, a Des Moinesbased recruiter who specializes in finding candidates for IBM iSeries application development, has been tracking the trend. Based on information he has collected, iSeries developers who were being offered jobs in 1998 had an average of about eight years of experience; by mid-2000, the average was up to 10 years. Now it's 14 years, he said.

The data shows that "companies are hiring [to fill] fewer entry-level jobs and hiring more people with substantial experience," Viall said.

Older workers account for a growing percentage of the workforce in all professions, according to recent Federal Bureau of Labor Statistics (BLS) data. From August 2002 through August of this year, the number of workers age 55 and older rose from 19.9 million to 21.2 million. In the 45-to-54 age range, the rise was from 31.3 million to 32 million.

But the data doesn't neces-

sarily mean that employment prospects are improving for older IT workers. A BLS study conducted last year found that workers age 55 and older had a much harder time finding new jobs than their younger counterparts.

Still, there are typically large percentages of older workers in organizations that don't have high turnover rates. The U.S. government says up to half of federal IT workers will be eligible for retirement at the end of 2004. The same holds true for the Canadian government.

"I turn 50 my next birthday, and in five years I'll probably be gone," said Dale Haug, a planning manager for Canadian Customs and Revenue in Ottawa. "Probably a lot will be retiring.... The numbers are kind of scary for the government."

Russ Tessman, a manager at Vermillion Group, an IT recruiting company in Des Moines, said the older workers who have difficulty in the job market are those who aren't willing to change and learn new technologies.

Employers do find older workers attractive for their maturity, trustworthiness and work ethic, as well as their experience, said Tessman, But those workers "have to be willing to take a salary a 28-yearold would be willing to take," he said.

- Patrick Thibodeau



Alaska Kills \$100M Voice and Data Contract

Says VoIP installation was behind schedule; vendor blames state officials

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edge Center for related news:

QuickLink k1200 www.computerworld.com

BY MATT HAMBLEN

Alaska's state government last week said it has terminated a \$100 million voice and data communications contract with Alaska Communications Systems Group Inc. (ACS), citing delays in an installation of voice-

over-IP phones.
The five-year contract with
Anchorage-based
ACS called for

20,000 VoIP phones to be in place by last April, but only 239 had been installed as of last week, according to a statement from Gov. Frank Murkowski's office. The deal, which was signed in December 2001 by the previous gubernatorial administration, also included outsourcing of the state's voice and data network management functions to ACS.

Contractor's Response

In response to the termination notice, ACS said in a statement that the state had failed to meet its obligations under the agreement, "making it impossible for ACS to meet all of its performance objectives."

State officials didn't deliver an accurate inventory of existing communications services and equipment and didn't work with ACS to develop a detailed transformation plan, the company claimed.

ACS CEO Chuck Robinson said in the statement that the company had invested more than \$20 million in the project "and has consistently accommodated the state even beyond the scope of the original agreement" by adding things such as more satellite phones and expanded Internet connectivity. He added that ACS will attempt to recover its costs from the state.

"We don't agree with what ACS says went wrong, but we're not getting into a shouting match," said Ray Matiashowski, Alaska's deputy commissioner of administration. There were "a lot of different issues involved" in the state's decision to cancel the contract, Matiashowski said.

For example, the VoIP sys-

tem, based on phones made by Cisco Systems Inc., "never did reach service-level acceptance" because of jitter problems

that affected the sound quality, he said.

Matiashowski couldn't pinpoint the cause of the problems. But he pointed out that the state's network, which connects about 400 offices, is complex and stretches across a vast area with many high mountains.

Alaska officials still have a high degree of confidence in VoIP, Matiashowski added. "VoIP is good technology, and these kinds of technologies are worth pursuing, although they are complex and hard," he said.

Sound quality was a problem with VoIP phones three years ago, but the issues have since been resolved, said Alex Hadden-Boyd, senior manager of voice marketing at Cisco. Hadden-Boyd said jitter is "never" a problem with the phones themselves, but instead usually involves line connections. Cisco has already been invited by the Alaskan government to rebid the VoIP portion of the contract with another implementation partner in the future, she added.

The various functions that ACS was supposed to handle will be transferred back to the state's IT group while government officials assess what needs to be done to prepare for a new bidding process, Matiashowski said.

However, he added that ACS will continue to provide some voice and data services until it is officially disentangled from the contract.

Matiashowski said the collapse of the communications pact with ACS has taught him and other state officials that

Communications Breakdown

■ The contract signed by Alaska and ACS was due to run through the end of 2006 and had an expected value of \$100M.

■ ACS was supposed to take over management of 10 network services, including IP-based voice, video and data communications.

■ It was also scheduled to enhance the state's telecommunications network through steps such as the installation of VoIP phones.

they need "to pay more attention to how the contract is worded so we have a clearer understanding of expectations. We'll take the lessons learned and move on."

Aventail Expands SSL VPN Tools By Adding Endpoint Technology

Software controls remote access to systems from high-risk devices

BY MATT HAMBLEN

Aventail Corp. last week announced that it has added endpoint control technology to its virtual private network (VPN) appliances in an effort to increase the security of remote connections to corporate systems from devices such as airport kiosks and handheld computers.

Seattle-based Aventail said the software can be downloaded for free and installed on its rack-mountable EX-1500 hardware, which supports the SSL data encryption protocol. The new technology will also be built into remote access policy-enforcement tools sold by seven other vendors, according to Aventail officials.

The endpoint capabilities are designed to let network managers control access to corporate systems based on

the computing devices being employed by end users and the security risks that they pose, said Jude O'Reilley, a senior product manager at Aventail.

The technology should give IT staffers at the U.S. operations of Paris-based banking and financial services firm BNP Paribas more control over remote access policies and security, while letting end users take advantage of the convenience of SSL VPN technology, said Bruce Lee, CIO at the U.S. unit in New York.

Emergency Access

The corporate and investment banking divisions at BNP Paribas Americas already use Aventail-based SSL VPNs to provide remote access in the event of an emergency, like "if we suddenly need 600 people to work from home or a temporary location," Lee said. The endpoint control software could enable the bank to support everyday use of the VPNs, he added.

Zeus Kerravala, an analyst at

The Yankee Group in Boston, said the new feature is the first of its kind and will let companies that use SSL VPNs directly integrate security mechanisms into their remote access setups. SSL VPNs can provide access to corporate data from virtually anywhere, "but there's a problem in that the IT department doesn't have control of that PC, even if you are an authorized user," Kerravala said.

He added that he expects endpoint control tools to be developed by other vendors as use of SSL VPNs grows.

VPNs are one of the few growth areas in IT, according



to Steven Harris, an analyst at Framingham, Mass.-based IDC. SSL VPNs and rival products based on the more established IPsec security protocol will both remain popular, Harris predicted. He said that clientless SSL technology will be the preferred method of connecting end users who need only limited functionality, such as e-mail access, while IPsec will support workers who need a full range of access capabilities.

Paul Lowenwirth, vice president of telecommunications at Viewpointe Archive Services LLC in Houston, said his company is looking into using SSL VPN technology to help secure access to databases that contain a total of 29 billion check images.

Viewpointe currently spends about \$10 million annually on IPsec VPN services from Sprint Corp. and World-Com Inc., which does business as MCI, Lowenwirth said.

The VPNs are used to protect the transmission of 70 million check images nightly, as well as the retrieval of individual images for end users, But Lowenwirth said that SSL technology could be useful at a wider range of user endpoints than IPsec is.

BRIEFS

CERT Warns of Flaw in OpenSSH

The CERT Coordination Center in Pittsburgh warned IT managers about a security hole in the OpenSSH software that's bundled with many Unix and Linux operating systems. CERT said the flaw in OpenSSH, which lets network administrators communicate with remote hardware devices, could be used to run malicious code on systems or to launch denial-ofservice attacks.

Sprint Taps IBM, EDS for Apps Work

Sprint Corp, said it expects to save \$150 million in IT costs over the next five years by outsourcing development and maintenance of some of its applications to IBM and Electronic Data Systems Corp. The companies didn't disclose the value of the two deals. Sprint said "several hundred" of its IT workers could be affected, but it added that it will try to retrain laid-off employees or find them jobs at IBM or EDS.

Health Firm Awards IT Contract to CSC

Computer Sciences Corp. announced that it has won a sevenyear, \$250 million outsourcing contract from St. Louis-based Ascension Health Inc., which operates health care facilities in 20 states and the District of Columbia. El Segundo, Calif.-based CSC will manage IT work at Ascension's national offices and its facilities in Tucson, Ariz. The deal could be expanded to include other operations, CSC said.

Short Takes

MICROSOFT CORP. said it has expanded the multilingual support in the Tablet PC version of the Windows XP operating system. . . . NELL INC. and SUNGARD DATA 3787EM5 INC. in Wayne, Pa., said they're jointly offering a disaster recevery service that involves the use of Dell servers.

Continued from page 1

Linux

may look into open-source on the desktop at some point in time, but she said it won't happen in the "foreseeable future."

In the meantime, Surdu said he thinks Linux is "absolutely ready for prime time" for selected server-based applications. He said decisions will be based on application type and transaction, architecture and design requirements.

Surdu said the exploration of Linux is being done as part of an aggressive worldwide program by Ford to simplify and standardize its infrastructure. He estimated the work could take three to five years and noted that Ford has accumulated over time "just about every flavor of everything."

"I believe we are not too different from many companies in that we have this onein-a-row syndrome. Every new solution is a new architecture and a different type of technology, and that requires a tremendous amount of integration," Surdu said, adding that the wide range

of technologies has become cumbersome and difficult to manage.

Ford certainly isn't the only large corporation expected to test the Linux waters in a bigger way in the server environment. In a Forrester Research Inc. survey of 75 IT executives at companies with at least \$500 million in annual revenue, 24% of the respondents said they were likely or very likely to adopt Linux during the next year for infrastructure purposes, according to Ted Schadler, an analyst at the Cambridge, Mass.-based firm.

Among that group, 17% said they were likely to use Linux for application serving, and 15% said they were likely to run databases and engineering workstations on Linux. But only one company said it was likely to move to Linux desktops during the coming year, Schadler said.

Although Ford is looking at Linux in new and different scenarios, the open-source operating system isn't entirely new to Ford, Surdu noted. The company for several years has used Beowulf Linux clusters for engineering applications,

and it has also used Linux for some of its file and print servers, he said.

Ford is advertising for a systems administrator to participate in developing its global Red Hat Inc. Advanced Server 2.1 Linux load, according to an ad in LinuxBusinessWeek.

The position is advertised as a long-term contract that will run more than one year. According to the ad, responsibilities include developing and testing the Ford Linux load, packaging and distributing the load for global implementation and preparing complete installation documentation and test procedures.

Ford also has a contract with SuSE Linux AG, according to a spokeswoman for the automaker.

Dan Kusnetzky, an analyst at IDC, said his company tracks about 140 Linux vendors. He said Linux commands a very small percentage of the overall market for desktop operating systems. "The strength of Linux right now can be found in server operating environment shipments," Kusnetzky said. "The primary use is for infrastructure: Web services, file

Will it be the be-all, end-all for Ford Motor Co.? No way. But we are very encouraged and pretty excited about Linux in certain spaces.

GEORGE SURDU. DIRECTOR OF GLOBAL IT INFRASTRUCTURE, FORD services, print services, basic network services."

An IDC survey of 1,000 IT decision-makers in North America and Europe showed that the top reasons why their companies are deploying Linux are the initial cost of the software, a perception that the software is reliable and highly available, lower ongoing cost of operations, the availability of applications on Linux and their general approval of the opensource model. Some also indicated that they have looked to Linux because of issues they have had with Microsoft licensing or business practices.

About a third of the companies polled had fewer than 100 employees, and a third had more than 1,000, Kusnetzky said.

Continued from page 1

Cybersecurity

quirements and that any fixes they provide to patch vulnerabilities are reliable and won't compromise those configurations.

The idea behind the initiative is to use the federal government's purchasing power to make software vendors accept more responsibility for the security of their software. said Alan Paller, director of the SANS Institute, a Bethesda, Md.-based security research firm.

The initiative was prompted by the users' growing list of problems resulting from unsafe software configurations, he said, adding that software vendors will be required to ensure that default settings are secure to avoid problems later on.

The federal government recently launched a procurement program called Smart-Buy, which it hopes will elicit better pricing and contractual terms from software vendors by consolidating purchases. SmartBuy will allow federal agencies to negotiate more stringent terms relating to security, Paller said. The initiative being announced tomorrow is an example of that tougher stance.

"This is about partnering with vendors so that they take

responsibility" for software security. Paller said. He added that he expects the federal initiative to set a model for software procurement in the private sector as

U.S. Department of Energy CIO Karen Evans, who was recently named by President Bush



participating in the announcement are the U.S. Department of Homeland Security, the Na-

> tional Security Agency, the Defense Information Systems Agency and the U.S. General Services Administration. Also involved in the announcement are approximately 120 CIOs and security specialists from government and industry.

> > Sources familiar

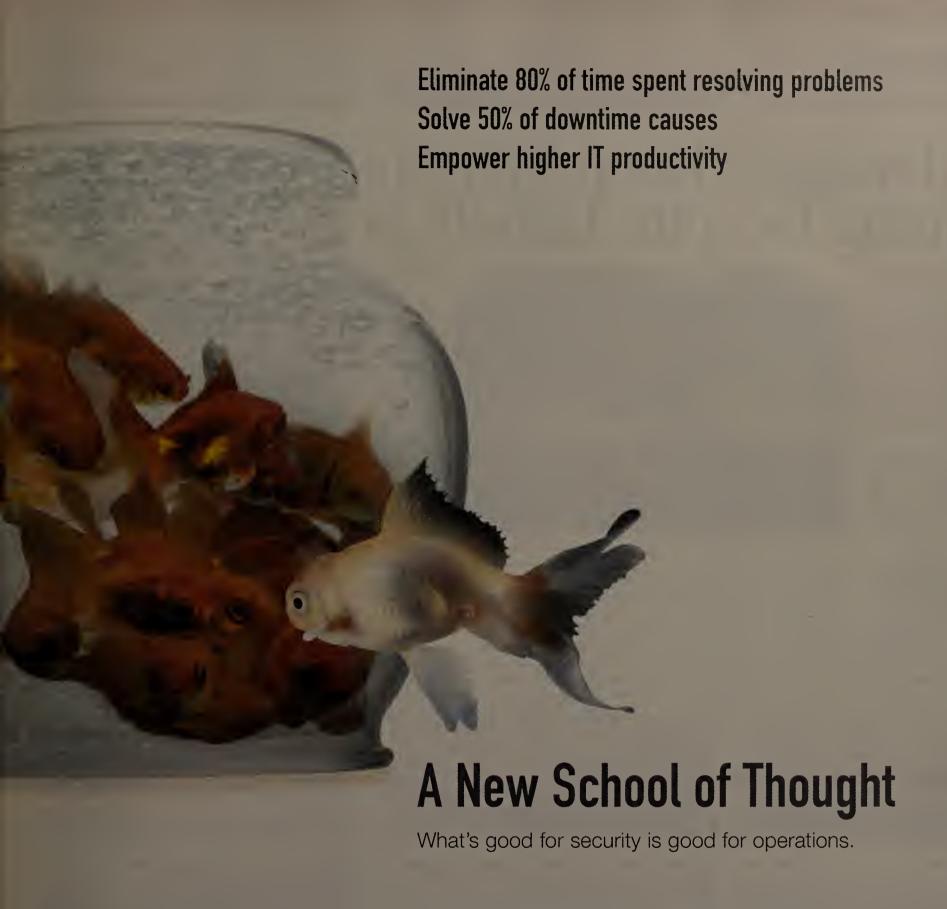
with tomorrow's announcement confirmed Oracle's involvement in the initiative. An Oracle spokeswoman on Friday declined to comment.

CIS Vice President Bert Miuccio said the initiative builds on an effort that the CIS led last year involving the creation of benchmark security standards for Windows 2000 professionals [QuickLink 31458]. That effort focused on creating a checklist of security settings for Windows 2000 systems that vendors could use when shipping systems

Last year's initiative was backed by several government agencies, including the NSA, DISA and the National Institute of Standards and Technology. The scope of tomorrow's announcement is significantly broader, Miuccio said.

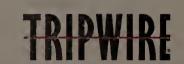
Dan Verton contributed to this story.





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IT Managers Keep Systems Running Despite Isabel's Fury

Hurricane prompts users to back up key data, evaluate their disaster plans

BY LUCAS MEARIAN

NFORMATION technology managers in the mid-Atlantic region last week double-checked telecommunications lines and activated their disaster recovery plans in preparation for the arrival of Hurricane Isabel. And for users like Martin Colburn, the effort paid off.

Colburn, chief technology officer at the National Association of Securities Dealers Inc., said the area around its headquarters in Rockville, Md., was hit hard by the hurricane. But he added that the systems in NASD's data center continued running smoothly on backup generator power.



"We've had flooding and significant power outages," Colburn said. "But we've not had any missed transactions."

Colburn's advice for other IT managers facing similar disasters is, Be prepared. "We started preparing several days ago to ensure that we had our business continuity plans in place," he said, one day after

Isabel stormed its way into North Carolina on Sept. 18 and then swept inland through Maryland and other states.

The hurricane packed heavy rains and wind gusts that topped 100 miles per hour. Seventeen deaths had been attributed to it as of Friday afternoon, and government officials said Isabel left more than

4 million customers in seven states without electricity.

Despite the power outages, Atlanta-based Cingular Wireless said in a statement that all of its network switches in affected areas were fully operational. The company added that only "a very limited number" of its cellular antenna sites were out of service.

Cingular activated its emergency plan on Sept. 15. Network operations and support personnel were put on standby to respond to problems. Cingular said it also filled the fuel tanks on all its generators and assembled hundreds of additional backup devices in case they were needed.

Similarly, New York-based Verizon Communications put an internal command-andcontrol plan into effect prior to Isabel's arrival. "We're checking and double-checking communications links," said John Griffin, vice president of business continuity and emergency preparedness at Verizon. "When the event occurs, we have to already know who's going to do what."

Mark Pennington, information systems director at the Virginia Department of Emergency Management in Richmond, said he reviewed its business continuity plans before the storm to ensure that they were up to date. Pennington said he also replicated all of the agency's server data to backup sites "so if we do get hit hard, at least our information is moved off-site."

The systems at the District of Columbia Emergency Management Agency in Washington remained operational throughout the hurricane, said senior IT manager Ned Ingraham. But Ingraham added that he was glad he did a major test of the agency's emergency generator a week before Isabel struck. The test showed that several electrical circuits weren't connected to the generator — a problem that Ingraham was able to correct in time for the storm.

Blackout Experience Yields Divergent Backup Strategies

BY PATRICK THIBODEAU

Human nature being what it is, IT managers' responses to the alarm bells set off by last month's massive blackout have a lot to do with whether or not they were affected by it.

According to a survey of 500 IT managers released last week by data center user group AFCOM, IT managers in the blackout area are tending to focus on fixing their own problems, such as improving backup power. Unaffected companies, however, are showing more interest in turning to vendors for help.

For some IT managers, the difference affirms a basic truth about human behavior: There is no substitute for experience.

"What you're seeing there is a little bit of pain," said Don

Tissell, server facilities manager at Frito-Lay Inc. in Plano, Texas, referring to the actions of data center managers affected by the blackout. "Living it and reading about it are two different things," he added.

Learning From Experience

Of those affected, according to the nationwide survey by Orangc, Calif.-based AFCOM, 19% said they have plans to test backup power devices, compared with 8% of those who were unaffected; 18% of those who lost power in the blackout will be conducting additional training, as opposed to 8% of those unaffected by the blackout. And 17% of the affected data center executives plan to test existing disaster recovery plans, while

just 9% of those who were unaffected will be doing so.

IT managers said the Aug. 14 blackout exposed problems such as inadequate training that might not be obvious to a company that wasn't affected, which is why affected companies have placed a greater emphasis on internal issues.

"Whoever went through the power outage is definitely rethinking what they have," said Juan Sierra, computer operations manager at Visiting Nurse Scrvice of New York. He's working to improve his organization's backup power and training.

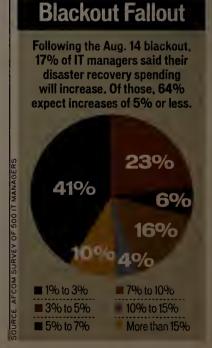
Being more externally focused, unaffected companies are more likely than affected companies to arrange for offsite backup services, according to the survey. Among unaffected companies, 24% plan to use a "hot" site with near-real-time data backups or a "warm" site with periodic backups. But just 4% of affected companies plan to use those services.

The survey also sought to determine the costs resulting from the outage. Two percent of those surveyed said they suffered more than \$10 million in productivity losses; 1% reported losses of between \$1 million and \$5 million. And 10% reported losses of \$100,000 to \$500,000.

More than half of those affected by the blackout, however, said that associated costs were less than \$10,000 — a figure that was met with some skepticism at an AFCOM conference in Dallas last week. Among those who expressed doubt was Dennis Reid, operations manager and the person in charge of contingency planning at Time Customer Service Inc., the order-fulfillment

center for publisher Time Inc.

Reid said those companies that reported little financial impact either had recoverable services or aren't really sure what the outage cost them. He said he suspects that the latter is true for many businesses.



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COMPUTERWORLD September 22, 2003 www.computerworld.com

BRIEFS

IBM Issues Patch For DB2 Flaws

IBM released a software patch designed to plug several security holes in Version 7.2 of its DB2 Universal Database software. The company said malicious hackers could use the vulnerabilities to launch denial-of-service attacks or gain root-level systems administration privileges on unprotected systems. It urged users to install the patch as soon as possible.

HP Offers Tools To Manage Data

Hewlett-Packard Co. said it's working with third-party soft-ware vendors to offer a set of data life-cycle management tools and services to IT managers. The offering is built around HP's storage products and includes capabilities such as data backup, replication and archiving. HP said it will initially target users in the financial services, health care and life sciences industries.

Proxim Found to Infringe on Patents

A U.S. District Court jury in Delaware found that Proxim Inc. had infringed on two wireless LAN patents held by Symbol Technologies Inc. The jury ordered Sunnyvale, Calif.-based Proxim to pay royalties to Symbol on sales dating back to 1995. Proxim said it will consider all available legal options and continue to pursue an infringement countersuit against Holtsville, N.Y.-based Symbol.

Short Takes

SABRE HOLDINGS CORP. in Southlake, Texas, said it plans to centralize technology development for the four online travel businesses within its TRAVEL-OCITY COM LP unit. . . . CORVIS CORP., a maker of optical networking products, said it plans to lay off 200 of its 1,400 workers by year's end to help cut losses.

MARK HALL • ON THE MARK

Split ID Management Can Secure Physical . . .

... and virtual assets more effectively than traditional security measures, claims Phil Libin, president of CoreStreet Ltd., a security firm in Cambridge, Mass. According to Libin, if you divide identity management functions into an authentication process (you are who you say you are) and authorization (you can do what you try to do), your systems will be at least as secure as a monolithic system, and you'll be able to protect physical assets with the same technology. "Use whatever authentication technology you choose — biometrics, passwords, digital

certificates, whatever — but don't use the same system for authorization," he warns. That's because most combination identification management products use a centralized LDAP or Microsoft Active Directory database to authorize what a user can do once he's been authenticated. That's OK if all you're doing is having

people log onto computers locally. But Libin says performance will be unacceptable for a widely distributed organization or for linking physical access with your online authorization system. The company's (take a breath) CoreStreet Real Time Credential Validation Authority purports to fix that. It uses edge servers, such as those offered by Akamai Technologies Inc., also in Cambridge, to send fast, 20B authorizations to requesting devices even door locks. That's why Stockholm-based Assa Abloy AB, the world's largest maker of locks with

brands such as Yale and Chubb, will be adopting the technology in early 2004.

And if you're building an identity management system in Web services, you're probably fumbling with lots of Java or .Net code and gazing at all the specifications being bandied about the industry, hoping to follow the right path. Well, ear-

ly next quarter, you might get some relief when Phaos Technology Corp. in New York releases Liberty Identity Management 1.0. The product can take existing ID management software offerings, such as those from Netegrity Inc. in Waltham, Mass., or Oblix Inc. in Cupertino, Calif., and tie them into a Web services application following the proposed industry standards. "Beats the heck out of trying to do it yourself," says Phaos CEO Roger Sullivan. Makes you wonder whether that's a warning or a promise to Web services developers.

users' minds, you can bet spam is. According to a survey commissioned by the McAfee division of Network Associates Inc., unwanted e-mail is the top timewaster for end users. Nearly half (49%) claim they spend 40 minutes per week deleting spam. The No. 1 spam topic, according to those polled, is porn. But apparently those nasty messages aren't doing the trick, so to speak. Respondents say they delete spam 30.6 times per week but make love only 2.18 times on average. Could porn be the cure to overpopulation? And with all that nonsense racing across your network, users are probably screaming about how slow it seems to be running. But believe it or not, poor network performance can't always be blamed on spam. (Darn it.) Sometimes it's your application. Sometimes it's the Net. If you want to know which, consider a product in beta-testing right now from Apparent Networks Inc. in Vancouver, British Columbia. CEO Glenn Wong says AppareNet ProActive, which will ship in December, "hovers and swoops" over your network, sending packets on roundtrip journeys and having them report back on its condition - even how a carrier's operations are affecting your app's performance. ProActive feeds its results into management frameworks such as Tivoli and Unicenter. Expect pricing to be in the range of \$150,000. Next week, Sun Microsystems Inc. will announce that it's adding the Kabira Infrastructure Switch from Kabira Technologies Inc. in San Rafael, Calif., as an option to its recently announced Java Enterprise System, an integrated suite of software for Sun hardware. Kabira's software is designed to improve an application's performance, in part by turning synchronous transactions into asynchronous events and processing events in RAM instead of fetching data. The option will become available in early 2004.

■ While security isn't uppermost on your

Content Flow

Art Technology Group Inc. in Cambridge, Mass., today ships Version 6.1 of its ATG content management software. The upgrade adds support for WebSphere 5.0 and Red Hat Linux, and it can handle more unstructured data through its ATG Publishing 2.0 module. In addition, the new workflow component automates business processes. Pricing starts at \$90,000 for a 10-seat server license.

ISVs Try BEA's Java Developer Tools

BY JAMES NICCOLAI

BEA Systems Inc. said today that 30 independent software vendors (ISV) have agreed to support WebLogic Workshop, its integrated developer environment for building enterprise Java applications.

Actional Corp., Blue Titan Software Inc., Salesforce.com Inc., E.piphany Inc., Documentum Inc. and FileNet Corp. are among the vendors building controls and extensions that will allow developers to link functionality from their products with Java applications being developed in WebLogic Workshop 8.1, BEA said.

Actional created controls that developers can use to integrate performance data from Actional's software into an application being built using Workshop, said James Phillips, an Actional senior vice president. The company makes software for managing and monitoring the performance of Web services applications.

San Jose-based BEA said
Salesforce.com will use Workshop as a base for its Sforce
developer environment, which
allows users to customize
Salesforce.com's hosted CRM
applications. "There's a licensing framework where they will
distribute Workshop for their
developer base," said Dave
Cotter, BEA's director of developer product marketing.

About half a dozen ISVs will have Workshop controls ready today; the rest will have them in 90 days, Cotter said.

BEA isn't alone. Microsoft Corp. in July launched a program to encourage ISVs to create extensions for its Visual Studio .Net environment. Its Visual Studio Industry Partner software development kit is free to small ISVs and costs up to \$10,000 for larger partners, Microsoft said at the time. Microsoft has also partnered with some of the ISVs that BEA is courting, including Actional.

Niccolai writes for the IDG News Service.



PeopleSoft Upgrades Finance Apps, Extends Support Programs

Upgrade scripts, regulatory updates to be made available for longer periods

BY MARC L. SONGINI

OOKING TO ensure the long-term loyalty of its users, PeopleSoft Inc. last week announced extensions to some of its software support programs and said it plans to ship an upgrade of its finance applications in the fourth quarter.

At its Connect 2003 user conference here, PeopleSoft also introduced a set of tools designed to simplify the process of installing and upgrading its software. Company officials said the tools are part of

a wider push to make life easier for users, a strategy that PeopleSoft has dubbed Total Ownership Experience.

Ted Weinrich, MIS manager at Larson Manufacturing Co. in Brookings, S.D., applauded the simplification initiative. "Hallelujah," he said. "It's what everyone should be doing."

Larson, which makes storm doors, uses about 20 of PeopleSoft's application modules. PeopleSoft has been repeating the simplification message over and over, Weinrich said, adding that it's now apparent "that there is a commitment at

the executive level" to fulfill the promises.

The announcement of the support extensions was welcome news to Mike Rothgery, a senior manager of human resources applications at Parisbased Cap Gemini Ernst & Young. "Whenever they extend the support for nothing, you've got to like that," he said.

One More Year

PeopleSoft said users with maintenance contracts will now be able to get scripts for easing upgrades to new applications for five years after the software they're using is released — up from four years. The Pleasanton, Calif.-based company also said it will in-

crease from five years to six the period in which it updates software releases to comply with changes in tax laws and other regulations.

The extensions apply to application releases starting with PeopleSoft 8.0 as well as the J.D. Edwards 5 software that PeopleSoft bought as part of its August acquisition of Denver-based J.D. Edwards & Co.

Andy Allbritten, head of support services and world-wide sales at PeopleSoft, said the extensions weren't part of the company's effort to fend off a hostile takeover attempt by Oracle Corp. Oracle has said that it would support PeopleSoft's existing applications for at least 10 years.

IBM, Microsoft Show Off Advanced Web Services Technologies

New specs could speed adoption

BY CAROL SLIWA

IBM and Microsoft Corp. staged a demonstration here last week to show how the advanced Web services specifications that they have developed will make it easier for companies with disparate systems to securely and reliably engage in electronic business transactions.

Microsoft Chairman Bill Gates and IBM Senior Vice President Steve Mills, who heads the company's software group, pledged to seek vendor and customer feedback on their advanced specifications for security, reliable messaging and transactions before submitting their work to a standards body.

"We'll see what the feedback is like. That could make the schedule vary somewhat, but the hard part is behind us," Gates said.

The companies have been cooperating on Web services specifications for well over a year in the hope that their work will help accelerate the adoption of Web services for cross-company applications.

IBM and Microsoft last week gave the first demonstration of their advanced Web services specifications in a heterogeneous environment consisting of Microsoft and IBM software, including some systems that ran on Linux. The demonstration involved an automotive dealer, a manufacturer and a supplier involved in a business transaction to get parts from one company to another.

Because of the advanced

Web services specifications, the companies wouldn't have to use the same software systems or develop their applications at the same time, as they might have had to do in the past, officials claimed. Instead, they would be able to use their existing infrastructures.

Standards-based

Gates said the advanced specifications, which IBM and Microsoft had outlined on prior occasions, build on basic Web services standards that have already been accepted by the industry. He said the security specifications have already been submitted to the Organization for the Advancement of Structured Information Standards (OASIS) under royalty-free terms.

Shared Goals

IBM and Microsoft are working on advanced Web services specifications in the following areas:

= SECURITY

= RELIABLE MESSAGING

■ TRANSACTIONS

No decision has been made about the standards body for the other specifications, although OASIS is a possibility, said Gates.

"This is a set of standards that we hope to see implemented not just in [Microsoft's]. Net and [IBM's] Web-Sphere but also in many other vendors' products," Gates said. He added that Microsoft and IBM are "being as inclusive" as they can in seeking input.

But not every vendor is expected to rush to participate. Ed Julson, group manager of Web services marketing at Sun Microsystems Inc., said he was puzzled by last week's IBM-Microsoft interoperability demonstration.

"This is largely a nonevent for the industry," he said. "I don't know what's new here." Julson said IBM and Microsoft demonstrated reliable messaging, single sign-on and federated identity, but there have been standards in those areas for two years. He cited the ebXML suite of specifications for reliable messaging as well as the Liberty Alliance's work in the areas of single sign-on and federated identity.

COMING SOON

www.computerworld.com

PeopleSoft is also developing:

- A tool called **Beethoven** that's designed to help users manage their applications portfolios. **Scheduled for release** in the first half of next year.
- A version of a business process modeling tool, originally built by J.D. Edwards, that will add support for PeopleSoft's own applications.

Due next quarter.

■ Tighter integration of corporate training management and human resources applications.

Due this week.

The upcoming PeopleSoft Enterprise Financial Management 8.8 release includes automated configuration capabilities designed to help users lower their implementation costs, said Susan Foley Kane, vice president of product marketing for the finance software.

The upgrade will also add instant messaging support, embedded data analysis tools and on-demand processing capabilities that will streamline financial reporting and transactions, Kane said.

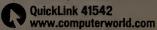
Entergy Services Inc., a
New Orleans-based utility and
energy services company, uses
multiple versions of PeopleSoft's finance software and
has done extensive testing of
the 8.8 release. Steve Myers,
manager of revenue and cash
accounting at Entergy, said the
upgraded applications will let
him automate bank accounting
and reconciliation processes.

Myers added that support for instant messaging is another big improvement. "We're constantly getting all sorts of requests in various areas," he said. "With instant messaging, you could answer those quickly and easily move on."

Stacy Cowley of the IDG News Service contributed to this story.

WORLD BEATER

J.D. Edwards 5, now called PeopleSoft EnterpriseOne, finally surpasses its AS/400-based predecessor in functionality:



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Companies Test RFID Waters But Remain in Shallow End

Projects are on the way, but technology could take years to fully implement

BY JAIKUMAR VIJAYAN CHICAGO

eral large companies last week outlined their plans to move ahead with RFID technology as a replacement for bar codes. But there are formidable obstacles to the technology's widespread adoption, they said.

At the inaugural Electronic

Product Code (EPC) Executive Symposium held here last week, users said it will take five to 10 years for radio frequency identification (RFID) technology to be fully deployed at the individual item level.

Consumer products giant Johnson & Johnson is piloting the technology at some of its warehouses, according to Pat Rizotto, vice president of global consumer initiatives at the New Brunswick, N.J.-based company.

"We'd find huge savings if all we did was better understand what comes in through the front doors, where it is in the distribution center and what was shipped out the back door," Rizotto said during a panel discussion at the conference.

The next step is to determine whether retail partners would be interested in working directly with Johnson & Johnson to implement RFID

tagging, he said. The company is also looking at using the tags to track some of the more expensive products in its medical devices and diagnostics business, Rizotto said.

But he didn't give a timetable for implementing the technology, saying that a formal business case has to be made for it first. "We have a good warehouse management system. EPC will enhance what we have," Rizotto said.

Tesco PLC, a Cheshunt, England-based grocery store chain, is testing RFID in its

RFIDelay Early according to RFIO to includ for a Quarassuration of the according to RFID language for case and a RFID language for

supply chain and at the item level by placing RFID tags on DVDs. The "instant visibility" the technology provides is helping Tesco better understand customer needs, improve customer service and decrease thefts, said John Clarke, Tesco's director of group technology and architecture.

Challenges Ahead

But there are several major challenges that need to be addressed before it will be possible for companies to take full advantage of RFID's potential, said Gerd Wolfram, project manager at the Extra Future Store, a supermarket in Rheinberg, Germany, owned by the \$54 billion Metro AG group.

Metro is using the store as a laboratory of sorts to test RFID and other new technologies. RFID tags are being used at the pallet, case and item level to keep track of inventory, replenish shelves, track product expiration, enable real-time stock-taking and better utilize storage space.

But there have been problems with the quality of RFID labels, readers and the software for capturing RFID data, Wolfram said. The technologies have required quite a bit of customization to work in Metro's environment. The lack of standards for implementing RFID has also been problematic, he said.

The costs associated with RFID tags have been falling, but they're still too high compared with the cost of bar codes, users said. And the scalability of the technologies is also relatively untested, they added. •

EMC, NetApp Expand Low-End Storage Lines

Products could replace direct-attached storage

BY LUCAS MEARIAN

Some leading storage vendors are targeting small and midsize businesses with new lowend hardware and software. But the products are also attracting the attention of corporate IT managers who see them as a good fit for business units, workgroups or remote offices.

EMC Corp. today plans to release a pair of storage management applications for administering midrange disk arrays as well as Oracle, Sybase and SQL Server databases. The rollout includes an application for configuring and managing storage-area networks (SAN), plus a reporting tool that can monitor usage of storage resources (see box).

Also today, Network Appliance Inc. in Sunnyvale, Calif., is due to announce an entry-level scries of storage servers that start at \$10,000. Meanwhile, Hewlett-Packard Co. last week detailed plans to develop products and services for small and midsize compa-

nies, including versions of its StorageWorks devices tailored to such users.

For smaller IT shops, the new offerings provide a potential way out of direct-attached storage and into more efficient SAN or network-attached storage (NAS) installations.

Jim Draughn, manager of network operations at Acuity

New Products

EMC

- VisualSRM, a storage resource management tool for monitoring and reporting on the usage of disk capacity and data files. Starts at \$2,000.
- VisualSAN, a tool that automates configuration and performance management functions on SANs. Starts at \$6,000.

NETAP

- FAS250, a storage server that supports up to 1TB of data and can be used in NAS installations or on iSCSI-based SANs. Starts at \$10,000.
- FAS270, a higher-performance device that also works on Fibre Channel SANs and has a storage capacity of 4TB as a single system or 48TB in a cluster. Starts at \$10,000.

Lighting Group, a division of Atlanta-based Acuity Brands Inc., said the high cost of storage management software kept his unit from buying a SAN until EMC developed its VisualSAN management tool.

Easy to Use and Install

As a beta tester, Draughn has used VisualSAN for about six months to manage the process of backing up 150 Dell servers and an Oracle database to a 10TB SAN with two Clariion CX arrays and two Fibre Channel switches.

"We were looking for something cost-effective but that had a lot of features," Draughn said. "The GUIs

were really easy to use and install, and we got it up and running with minimal training." He added that VisualSAN lets him take point-in-time snapshots of data so the information can be restored if it gets corrupted.

Similarly, Patrick O'Keefe, network information systems manager at the Arizona State Retirement System in Phoenix, said he bought one of Net-App's new FAS250 storage servers about six months ago as an early user in order to move from direct-attached storage to a SAN. O'Keefe is using the SAN setup to make snapshot copies of Oracle databases. "We can restore a database in less than five minutes with a snapshot, where before it took us seven hours," he said. "We got an ROI in four months just in time savings alone."

O'Keefe said the NetApp device also lets him access about 400,000 records and

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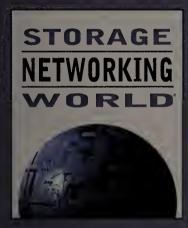
transfer data to retired state employees in Arizona in minutes vs. the two days it took with directattached storage.

Nigel Ball, vice president of small and medium business operations at HP's enterprise server and storage division, said the company will focus on upgrading its ProLiant servers and Storage Works products for small and midsize companies. For example, HP earlier this month announced a Windows-based NAS device aimed at departmental and remote office applications.

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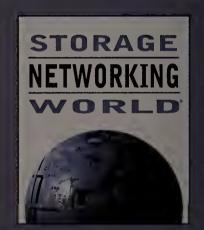
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Honorable Mention: Cox Communications

SYSTEMS RELIABILITY

Winner: Guidant Corp. Winner: Motorola Inc.

Honorable Mention: Pitney Bowes

INFORMATION SECURITY

Winner: INTEGRIS Health Inc.

Winner: Los Alamos National Laboratory

Honorable Mention: US Military Academy, West Point

FINANCIAL PAYBACK

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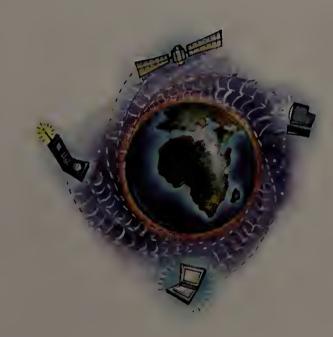
Winner: Ford Motor Company Honorable Mention: Net IQ

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Plan to Lower H-1B Cap Sparks Debate at Hearing

Corporate officials seek more visas; IEEE exec warns of lost tech jobs

BY GRANT GROSS WASHINGTON

Officials from Intel Corp. and Ingersoll-Rand Co. last week told a congressional panel that the annual cap on H-lB visas shouldn't be lowered to levels that predate the dot-com boom. But the president-elect of a group for IT

professionals retorted that the visa program is taking money from the pockets of U.S. workers.

The number of new H-lB visas that can be issued to foreign workers will drop by two-thirds when the federal government's next fiscal year starts Oct. l, unless Congress votes to modify the cap reduction. At last week's Senate hearing, the corporate representatives

who testified argued that more visas are needed to fill technical positions for which qualified U.S. workers aren't readily available.

Ingersoll-Rand searched for more than a year before it was able to fill a pair of plastics

MORE H-1B NEWS

and industrial robotics engineering jobs, and it finally hired Canadian residents for both positions, said Elizabeth Dickson, immi-

gration services adviser at the maker

of industrial equipment, climate-control devices and other products.

For full coverage of H-1B visa issues, go to our Web site:

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LIBURN says blade

servers could cut

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"It's hard to displace U.S. workers when you don't have any U.S. workers to choose from," Dickson said. Ingersoll-Rand's headquarters are in Hamilton, Bermuda, and its U.S. executive offices are located in Woodcliff Lake, N.J.

Patrick Duffy, a human resources attorney at Intel,

said the chip maker tries to find U.S. workers to fill jobs before bringing in H-1B visa holders. But he noted that more than half of the graduate students enrolled in physical sciences programs at U.S. universities come from other countries.

About 5% of Intel's U.S. employees are H-lB holders, according to Duffy. "This small percentage is comprised of individuals possessing unique and difficult-to-find skills," he said.

But John Steadman, president-elect of the U.S. chapter of the Institute of Electrical and Electronics Engineers Inc., told the Senate Judiciary Committee's Immigration Subcommittee

that unemployment rates among IT engineers reached 7% earlier this year — an all-time high. "This translates to hundreds of thousands of unemployed U.S. engineers," Steadman said.

Steadman, dean of the engineering school at the University of South Alabama in Mobile, called for longerterm solutions to the lack of qualified IT workers instead of an increase in the H-1B cap. He urged that more money be spent to encourage U.S. students to major in engineering and science.

Gross writes for the IDG News Service.

Users Turn to On-Demand Technology in Data Centers

Provisioning software, blade servers tapped in bid to reduce IT costs

BY THOMAS HOFFMAN

IBM and rival vendors are pushing new technologies such as automated provisioning software and blade servers to help IT managers lower data center costs and scale up processing capacity as needed. And some users are buying into the idea.

For instance, Hewitt Associates LLC, a Lincolnshire, Ill.-based company that offers human resources outsourcing services, last week began using 10 IBM blade servers running Linux to power a calculation engine developed to prepare pension projections for workers at Hewitt's clients.

Speaking at an "infrastructure simplification" briefing held here by IBM, Hewitt CIO Perry Cliburn said the company initially built the Smalltalk-based calculation engine to run on IBM zSeries mainframes within Parallel Sysplex clusters.

But the engine put too much stress on the zSeries CPUs, consuming about 1,000 MIPS of mainframe processing power when demand for pension data was at its highest, Cliburn said. He added that the blade servers are expected to help Hewitt reduce CPU workloads and cut the cost of operating the system, which includes a client version of DB2, by as much as 90%.

Another user that's shifting some of its data processing to blade servers is Stamford, Conn.-based NYFIX Inc., which processes stock trades for Wall Street brokerage firms.

Jim Strasenburgh, director of computer services at NYFIX, said the com-

pany is developing about 50 applications that will run across a mixed installation of Linux-based blade servers from IBM and Unix-based devices made by Sun Microsystems Inc. NYFIX plans to start using the applications within the next couple of weeks to process trades for New York-based Cantor Fitzgerald LP.

Strasenburgh said NYFIX is trying to build systems that can be reconfigured on demand for its customers. The use of blade servers also "gives us a high-availability architecture with lots of redundancy," he noted.

To make it easier for IT managers to redirect data traffic between various servers, IBM in mid-October plans to introduce a set of server provisioning tools code-named Symphony, said Mark Shearer, vice president of eServer products. IBM disclosed initial details last month [QuickLink 40967].

To date, "a small number" of companies have taken steps to install technology that can shift data flows between

servers on an as-needed basis, said Clay Ryder, an analyst at The Sageza Group Inc. in Mountain View, Calif.

Further adoption will likely be driven by server consolidation efforts and competitive comparisons, Ryder added. "If Nike does it and cites great cost savings, then Reebok's going to notice," he said. •



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by Russell Senesac InfraStruXure Product Manager

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MARYFRAN JOHNSON

A Question of Credibility

RONICALLY ENOUGH, Forrester Research was hoping to shore up its credibility — not punch a great gaping hole in it — when it recently disclosed that Microsoft financed its re-

port claiming a "substantial cost advantage" for Windows over Linux.

But this unusual revelation backfired when users cut right through the smoke and mirrors. As we reported last week on our front page ["Users Wary of Linux Report," QuickLink 41320], the Forrester study looked biased, bought and paid for by

Microsoft as part of its relentless campaign to discredit open-source technologies in general and Linux in particular [QuickLink 41328].

"A Microsoft-commissioned report is going to be one-sided," software developer Mark Schunder told our reporter. Other users joined that chorus of skepticism, pointing out flaws in the Forrester report in everything from the puny sample size of only 12 companies (some supplied directly by Microsoft) to the largely meaningless comparisons of portal projects of different sizes and scope.

Forrester analyst John Rymer, who co-authored the report, was trying to do the right thing by being upfront about the Microsoft funding of his research project. He was justifiably worried about how it would look. In Rymer's defense, he pointed out how often other IT analyst reports fail to disclose anything at all about their vendor funding.

For me, that comment turned the spotlight on two glaring problems.

The first is the lack of any code of conduct for IT research firms, which aren't ethically bound as financial analysts are by SEC regulations. There are no watchdog agencies or professional associations to issue sanctions against ethical laps-



es. There should be.

"The real problem is that the research firms are public companies, and in a shrinking market, they are under pressure to gain revenue wherever they can," says Ian Campbell, a former IDC analyst and now CEO of Nucleus Research. Nucleus relies entirely on its user client subscriptions and ac-

cepts no vendor business. That allows this boutique research firm the luxury of being unusually blunt (and often controversial) when, for example, it issues reports debunking the ROI claims of various vendors.

Large research firms are more beholden than ever to their vendor clients in this tough economy. The vendors not only subscribe to their services but also pay for additional sponsored research and product consulting services. In some cases, the research firms then turn around and make purchasing recommenda-

tions to user clients. The potential for conflicts of interests is high.

The second glaring problem is the media's spotty record in asking enough of the right questions about the pedigree of the research we report on. Technology publications, business magazines and daily newspapers all run stories based on these analyst reports as though they were written by objective, independent experts. Rarely do journalists ask enough questions about the provenance of their opinions, surveys and predictions. Who paid for that piece of research? How were the participants selected? Was there a sole sponsor with a competitive agenda? I'm sorry to say that we largely missed the boat on those questions when we ran the original story about the Forrester report on Computerworld.com on Sept. 9 [QuickLink 41163]. We can do better, and we will.

When you see an analyst report or survey quoted in future issues of Computerworld, you're going to see more about its background so you can judge the veracity of the claims. If we can't find out who paid the bills for a particular study, we won't write about it. We're going to stop giving free publicity to suspect information. We hope others in the media will follow.



PIMM FOX

RIAA Stance Sounds Off-key

OME PEOPLE never learn. The Recording Industry Association of America believes it can put the technology genie back in the bottle, stopping the best thing to happen to recorded music since the 1983 introduction of the CD: namely, downloadable, shareable audio for MP3 players.

Ever since the RIAA earlier this month slapped 261 copyright infringement lawsuits on individuals, it's been clear that the industry group is driving down the road to ruin by looking in the rearview mirror. But then, this is the same industry that upped the price of recorded music on CDs even though they were less costly to make than vinyl records.

Rather than spend time and money busting 12-year-olds and grandparents, the RIAA ought to be touting the Internet as a way to expand business, build relationships with core constituents (teenagers), improve fidelity and promote new music groups online. But,

no, the RIAA would prefer to ignore the experience of every other industry and pay lawyers to huff and puff.

For example, back in the dark ages when you called a broker on the telephone and paid high fixed commissions to trade stocks and bonds, the notion of an electronic marketplace with user-friendly controls, real-time convenience and lower prices seemed preposterous.

Change the way you do business? Never. Put technology to work to create new markets? Forget it.

And yet this is exactly the story in financial services. Doom and gloom didn't materialize, but a wider array of consumer choices, replete with different service levels and price points, did. Sure, some full-service brokers have had to find other work, and the industry has gone through wrenching consolidation, but trading volume has ballooned, geographical constraints have

eased, and costs have been slashed. There's no way the financial industry could have kept pace with demand without embracing the public's use of technology. It's not just finance either; travel, publishing and other industries have successfully adapted to our new IT-dependent age.

Not everyone is as backward-looking as the RIAA. Apple Computer has proved the efficacy of selling music online through its integrated iTunes music store, which is geared to iPod users (they already passed the 10-million-download mark). Sony, breaking ranks with its industry brethren, announced that it would create an online service. For a market that has contracted 16% since 2000, perhaps it would be wiser to stop alienating customers, embrace technology and add a new revenue source.

The RIAA lawsuits underscore how little the industry understands and values technology. Because either you manage change through the smart use of IT, or the change manages you right out of business.

MICHAEL GARTENBERG

How Much Is Your Data Worth?

RECENTLY was asked the value of my laptop. I estimated \$2 million. When asked how that could be, I said, "Forget the laptop; that's what the data is worth."

With security on everyone's mind, forcing IT organizations to be aware of the value of data on the systems they deploy is just plain smart. IT departments need to begin educating users on the true value of data and to consider deploying digital rights management technology for business data, or face the consequences when that information is lost, leaked or stolen.

Three major trends will push this issue to the top of your agenda.

1. Electronic distribution. Many organizations regularly deliver intellectual property to clients or partners through insecure e-mail and thus face the danger of intercepted or modified content. Companies that provide financial, legal or health care services and government agencies are especially vulnerable because of the confidentiality of the work

they routinely engage in.

2. Mobility. Today's workforce is highly mobile. Laptops account for nearly 30% of computer systems used by business users, and employees also make frequent use of PDAs and flash memory devices with high capacity. They often carry corporate documents while they travel and routinely extend their workdays at home, where they expose those documents outside the corporate firewall. The result is that sensitive corporate data is often found beyond the realm of most

corporate security measures.

3. Interconnectivity. Finally, widespread digital distribution and the highly mobile nature of today's workforce are combining with the existence of Web-



MICHAEL GARTENBERG IS research director for the Client Access and Technologies group at Jupiter Research in New York. Contact him at michael.gartenberg@mindspring.com.

based corporate infrastructures and persistent highspeed access both at home and at work to threaten corporate assets. Along with the access they offer, interconnected systems provide more opportunities for data to fall into the wrong hands.

While these issues represent a major threat, they also present a market opportunity for vendors that can target the enterprise with digital rights management products.

For as long as PCs have had floppy disks, it's been possible for someone to walk off with confidential and valuable data. Now that digital devices of all types can easily hold multiple gigabytes, that threat is staggering. At a minimum, IT managers should

force policy management on their systems to prevent unauthorized copying.

They should also impress on users the dangers associated with leaving critical data lying around with easy access. To start, IT departments must educate end users about the *true* cost of their systems — not some TCO number, but rather the cost of the data they are entrusted with. Next, IT should begin evaluating vendor approaches to handling document and data security beyond the firewall. Finally, it should stop the ability to copy documents to removable devices at will.

How much is your computer *really* worth? And what are you doing to protect it?

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www.computerworld.com/columns

READERS' LETTERS

Project Failures Are Always With Us

N THE INTERVIEW with Sue Young ["Why IT Projects Fail," QuickLink 40568], she discussed fear as a reason for project failure. The uncertainty associated with completion of a project tends to inhibit project managers and senior executives from making critical decisions. Several years ago, I was assigned to manage a project and couldn't get stakeholders to sign a statement of work, a narrative description of products or services to be supplied under contract. Eventually, my manager told me to proceed with the project without the signatures. I promptly requested to be released from the project because it is my belief that the stakeholders' failure to sign the statement of work was a clear indicator that the project would fail, since they didn't express support of the project. The manager assigned a new person to the project, which was eight months late, \$3 million over budget and contained countless defects. Moreover, two of the stakeholders decided to launch their own variations of the project. John Reaves Senior project manager,

Senior project manager, Wachovia Corp., Charlotte, N.C., john.reaves@wachovia.com

E "Why IT Projects Fail" should

read the book *Systemantics*, by John Gall. Published way back in 1975, it contains much truth and sits on my desk to this day.

Steve Quiett

IS manager, Barney & Barney, San Diego, stevebq@ barneyandbarney.com

T APPEARS as though we have learned little in the past 30 years. What's in this article seems to be mostly the same things that were stated as causes for IT project failure in the early '70s.

Chad Coullard
Dudley, Mass.

Asking Too Much?

NODDED KNOWINGLY when I read the headline "IT Departments Face a Lack of Project Management Know-how" [QuickLink 40441] and laughed when I read the body copy. If there's an acute shortage of IT project managers, it certainly isn't being reflected in hiring practices or wage rates. From published reports, I'm the prototypical, in-demand project manager - technically astute, business-savvy, with advanced soft skills and experience communicating with everyone from C-level executives to shop-floor mechanics. So why, after offering IT project and program management (and training) as an independent for almost 20 years, have the last three years been the worst I've ever seen?

The article hints at what may be a large part of the problem: "They [IT hiring managers] tend to hire IT professionals with similar skills." Hiring practices are a problem, but I think there's more to it. The requirements I've seen lately for project manager roles are for Superman, Jack Welch and Wonder Woman (all in one individual) who can be a hands-on, individually contributing team player handling multiple projects in a matrixed organization, coding in Java or C# while building a distributed team, analyzing what business users really want, managing budgets that have been slashed while keeping upper management in the loop. Oh, and do all of it at pay rates that burger flippers at McDonald's would sniff at.

Christopher Casey, PMP
Casey Advisory Services
and Technologies Inc.,
Concord, Mass.

Product Liability

Normally, I'm pretty much in agreement with Frank Hayes, but I must disagree with a basic premise in his UCITA column ["Better Than UCITA," QuickLink 40624]. He says that software is different from conventional manufactured products. I've written entire systems and an operating system in many different languages, from as-

sembly through C++. All of these systems had one thing in common: They worked as specified and didn't have bugs. Why? Because they had code reviews and were tested thoroughly. Writing good, bug-free software is possible. It takes longer, but it is possible.

Why shouldn't software manufacturers be held responsible for the bugs in their systems? We have blindly accepted the asinine shrinkwrapped license agreements that come with software. Many of these license agreements state that the software isn't designed to do anything! I submit that software manufacturers should be held to the same product-liability standards as other manufacturers. Perhaps after a couple of them get sued, the others will get the message that they need to write better code.

Lee Zeis Greer, S.C.

computerworld welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843.

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HOW WE CHOSE THE WINNERS

During May and June, *Computerworld* invited IT customers – those companies that use technology but don't produce or sell it – to nominate vendors they believe offer leading-edge technology products or services that provide measurable payback. We received approximately 350 nominations. Customer nominations were venified by *Computerworld* via e-mail.

Computerworld then surveyed those vendors about the nominated technologies. A customer reference was contacted for each vendor being considered. Those surveys were vetted by a panel of Computerworld editors and then divided among a 10-person panel of IT executives for evaluation.

Special thanks go to our panelists: Cathy Brune, senior vice president, chief technology officer, Allstate Insurance Co.; William F. Finefield, CIO, Navy Exchange Service Command; Tsvi Gal, ClO, AOL Time Warner Inc., Warner Music Group; Bernard Gay, vice president of enterprise technology and operations, Royal Caribbean Cruises Ltd.; David R. Guzman, senior vice president and CIO, Owens & Minor Inc.; W. Douglas Lewis, executive vice president and CIO, Six Continents Hotels; Joseph Y. Lacik Jr., vice president of information services, Aviall Services Inc.; Bob Palmer, associate vice president of e-commerce technology, Lenox Inc.; Joseph A. Puglisi, group CIO, Emcor Group Inc.; and Rob Reeg, senior vice president of system development, MasterCard International Inc.

Evaluations were based on these criteria:

- The company's technology is innovative and original.
- It offers demonstrable value to corporate IT operations in Fortune 1,000 companies.
- It creates a new advantage or opportunity for customers.
- Customers have successfully implemented the technology and are getting measurable payback or competitive advantage from it.
- The technology will change the way companies do business or solve technology problems into the future.
 The 30 winners aren't ranked; they are

presented here in random order.

MONICA CHAMPION, senior vice president at SunTrust Banks, says it's impossible to manually monitor multiple partners' privacy compliance policies.

Watchfire Corp.

CATEGORY: Web site management

URL: www.watchfire.com

LOCATION: Waltham, Mass.

TECHNOLOGY: WebXM

HOW IT WORKS: WebXM scans every page of a company's Web site, seeking violations of preset policies or regulations. The suite includes three components: QualityXM ad-

dresses problems such as standards noncompliance, broken links or forms, slow-loading pages and faulty purchase checkouts. PrivacyXM identifies data collection, privacy policy linking, usertracking practices and other privacy-related matters. AccessibilityXM checks for compliance with government standards and the World Wide Web Consortium's Web Content Accessibility Guidelines, which regulate Web accessibility for the handicapped.

CUSTOMER SAMPLING: Corning Inc., The McGraw-Hill Cos., The Reader's Digest Association Inc., AXA Financial Inc.

TIP: SunTrust Banks Inc. first purchased WebXM as a service in order to get up and running quickly and to evaluate the product's usefulness, says Monica Champion, senior vice president of Internet and e-business. Once SunTrust became a believer, Champion switched to a perpetual license to save money in the long run.

WHAT'S IN STORE: Gartner Inc. analyst Lou Latham expects Watchfire to benefit from stringent regulations such as the Sarbanes-Oxley Act of 2002 because companies will keep a closer eye on all external communications. He also predicts that "we'll see a combination of [tools like WebXM] and business-focused software that tracks such things as Web site metrics and site usage statistics."



BY STEVE ULFELDER
Why tell when you can show?

Monica Champion opens Watchfire's

WebXM and clicks Scan. In minutes, the software finds a Web page advertising an auto race sponsored by Atlanta-based SunTrust Banks Inc., where Champion is senior vice president of Internet and e-business. The race has been over for weeks, but the Web page is still up. Not for long.

The goal of WebXM is to automate a task that has become practically impossible to perform manually — quali-Continued on page 26

When VENDORS LISTEN to IT

WHAT HAPPENS? Innovation. Project payback. Bottom-line results. This year's 30 Innovative Technology Award winners heard what their customers asked for — and delivered.

Centerpost Corp.

CATEGORY: CRM

URL: www.centerpost.com

LOCATION: Chicago

TECHNOLOGY: Multichannel notification HOW IT WORKS: It integrates with client systems to mine data, manage user preferences and deliver multichannel notifications.

CUSTOMER SAMPLING: United Air Lines inc., The Weather Channel Interactive Inc.

ClickTracks

CATEGORY: Web site management URL: www.clicktracks.com LOCATION: Scotts Valley, Calif. TECHNOLOGY: ClickTracks Analyzer HOW IT WORKS: It displays visitor behavior on a user's Web page, letting marketers see which keywords drive the most purchases. **CUSTOMER SAMPLING:** Green Mountain

Greekbath

CATEGORY: Application development

Energy Co., Brother Industries Ltd.

URL: www.creekpath.com

LOCATION: Denver

TECHNOLOGY: CreekPath Storage Opera-

tions Management Suite

HOW IT WORKS: A workflow engine, it integrates with a policy engine to help obtain maximum value from a storage network.

CUSTOMER SAMPLING: UAL Loyalty

Services

Endeca Technologies Inc.

CATEGORY: Internet applications

URL: www.endeca.com

LOCATION: Cambridge, Mass. TECHNOLOGY: Endeca ProFind

HOW IT WORKS: The tool combines traditional query search with a guided navigation technology to eliminate dead ends.

CUSTOMER SAMPLING: Barnesandnoble.com Inc., Tower Records, Crate and Barrel

FrontBridge Technologies Inc.

CATEGORY: Security URL: www.frontbridge.com LOCATION: Marina Del Rey, Calif TECHNOLOGY: FrontBridge TrueProtect Message Management Suite

HOW IT WORKS: An outsourced e-mail service, it protects against spam and viruses.

CUSTOMER SAMPLING: Bausch & Lomb

Inc., Sunkist Growers Inc.

Continued on page 28

PROJECT PAYBACK

■ Modules continuously and automatically alert **SunTrust of potential** privacy and brandprotection problems.

Continued from page 25

ty-checking enterprise Web sites. Corporate sites are just too vast (IBM's is said to run about 10 million pages) and content comes from too many sources for conventional quality assurance.

SunTrust uses Watchfire's Quality-XM and PrivacyXM modules. The latter initially caught Champion's eye in 2002. Like all financial services firms. SunTrust faces ever-increasing regulation regarding consumer privacy. "Fed regulations, state regulations, the SEC, it's just impossible to protect your customers" without automation, she says.

Cross-branding and linking further complicates matters. If your company links to another Web site that violates your stated customer-privacy policies, you may be in legal hot water. "SunTrust is everywhere," Champion says. "I'm out there [linking to] a lot of third parties — I need to know about their privacy policies. It's impossible with human beings."

The QualityXM module, which Watchfire claims is used by more than half of the Fortune 500, stands to pay for itself rapidly by alerting users to broken links, slow pages and faulty checkouts - problems that can alienate customers. Watchfire founder and Chief Technology Officer Michael Weider says the software works with any server and operating environment. And its drag on network performance is negligible: It's "equivalent to three or four users," he says.

Watchfire's value became abundantly clear to Champion in 2002, shortly after she implemented PrivacyXM. The Federal Reserve Bank of Atlanta audited SunTrust's Internet operations, and the bank passed with flying colors. "They were applauding me for having this," she says.

Applause from regulators? Sounds like a persuasive argument.

Ulfelder is a freelance writer in Southboro, Mass. Contact him at sulfelder@ charter.net.

Global Exchange Services Inc.

CATEGORY: E-commerce software/ services

URL: www.gxs.com

LOCATION: Gaithersburg, Md.

TECHNOLOGY: Enterprise System

HOW IT WORKS: Enterprise System electronically connects businesses to their trading partners using electronic data interchange (EDI) technologies, allowing customers to convert incoming documents to different formats, such as an EDI document into an XML format or

CUSTOMER SAMPLING: Liz Claiborne Inc., J.C. Penney Co., Eastman Kodak

TIP: When selecting a business-to-business technology, be sure that your selection can handle message arrival rates and sizes that are at least several multiples of your highest projected need, says Joe Dupree, global product manager at GXS. An e-commerce program can be

Continued on page 28

Brocade Communications Systems Inc.

CATEGORY: Networking equipment

URL: www.brocade.com LOCATION: San Jose

TECHNOLOGY: Brocade Fabric Manager

HOW IT WORKS: Simplifies management of storage-area networks by helping storage managers configure and monitor Brocade switches and Brocade SANs from a single console. These tasks include security management in SANs and management and aggregation of host bus adapters and downloads of firmware.

PARTNERS: Hewlett-Packard Co., IBM, EMC Corp., Hitachi Data Systems Corp.

TIP: Planning is "absolutely key" to deploying a SAN, says Glenn Exline, manager of advanced technology at the 45th Space Wing of the U.S. Air Force. "If possible, implement the SAN [and the Brocade gear] in parallel to your infrastructure, at first in a testbed and then across the real fiber," he says. Let users play with actual data off-line for storage or backup for a month or more. WHAT'S IN STORE: SAN management tools

are becoming increasingly important as

PROJECT PAYBACK

- Consolidated servers from 52 to 35.
- Reduced backups from 14 hours to two hours.
 - Increased storage capacity from 550GB to 3.5TB.

SANs get more complicated, says Eric Sheppard, an analyst at IDC. In the next year or two, expect to see SAN super-management tools that are more powerful and manage a group of SAN islands as one, he says.



BY MATT HAMBLEN

The threat of hurricanes helped motivate officials at Patrick Air Force Base in Florida to

move to a faster way to store and back up flight information.

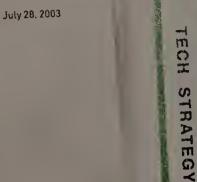
Before September 2002, the 45th Space Wing of the U.S. Air Force, the unit responsible for all launches at

Cape Canaveral Air Force Station, was using direct-attached storage and backing up data to tape. That took more than 14 hours - too long considering that a hurricane can make landfall within four hours of being spotted, says Glenn Exline, manager of advanced technology at the Space Wing.

Exline says that by installing 16 Brocade 3800 fabric switches with the Brocade Fabric Manager software tool, the backups can be completed in two hours, fast enough to avoid high winds. He says Fabric Manager simplifies SAN management by enabling him to upgrade all the firmware across all 16 switches at once. It also lets him manage reboots in a predetermined order.

The Space Wing is expected to recoup the cost of the upgrade, nearly \$940,000, within two years because of the time saved applying server patches and refreshing data. One-third as many servers are now required, he says.

Brocade was picked by two integrators because it was the most innovative at the time, Exline says. "We've had zero major problems," he says. The move to the Brocade system took four weeks and affected 3,800 users, but resulted in only six trouble calls during that month of setup, says Exline.



InfoWorld
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- ★ 1 Microsoft Windows Server 2003
 - 2 Red Hat Linux 8.0
 - 3 Mac OS X 10.2

BEST ENTERPRISE APPLICATION

- * 1 Microsoft Office 2003
 - 2 Oracle E-Business Suite 11i
 - 3 Microsoft Project 2002

BEST COLLABORATION PRODUCT

- ★ 1 Microsoft Exchange Server 2003
 - 2 SuSE Linux Openexchange Server
 - 3 IBM/Lotus Notes 6 and Domino 6

FAVORITE VENDOR

- * 1 Microsoft
 - 2 Apple Computer
 - 3 IBM

Camp

- Aug

distribution tion

or and be routed to te applications. focuses on dications with the n infrastructure domain instead plications other.

Page 4

Trust the opinion that matters. Yours. InfoWorld surveyed more than 1,000 readers and the mass ignored was clear: Microsoft is the top provider of software and services in several key enterprise areas. To see how these products can work for you or to view the full survey results, go to microsoft.com/infoworldawards

Microsoft

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Continued from page 26

Hewlett-Packard Co.

CATEGORY: Storage URL: www.hp.com

LOCATION: Palo Alto, Calif.

TECHNOLOGY: HP StorageWorks
Enterprise Virtual Array

Enterprise Virtual Array

HOW IT WORKS: Offers high availability, data protection and fault tolerance and uses virtualization to improve capacity utilization.

CUSTOMER SAMPLING: H.D. Vest Inc., The Dow Chemical Co., Screen Actors Guild

IBM

CATEGORY: Enterprise systems

URL: www.ibm.com LOCATION: Armonk, N.Y.

TECHNOLOGY: IBM eServer p690

HOW IT WORKS: Offers performance, scalability and upgrade on demand with dynamic logical partitioning and flexible capacity.

CUSTOMER SAMPLING: Colgate-Palmolive Co., Gap Inc.

InterSystems Corp.

CATEGORY: Application development

URL: www.intersystems.com **LOCATION:** Cambridge, Mass.

TECHNOLOGY: Cache

HOW IT WORKS: Built for high-performance, massively scalable transaction processing applications, it offers a multidimensional data and application server.

CUSTOMER SAMPLING: Ameritrade Holding Corp., G. Pierce Wood Hospital

Mindjet LLC

CATEGORY: Mobile/wireless URL: www.mindjet.com

LOCATION: Larkspur, Calif.

TECHNOLOGY: MindManager for Tablet PC **HOW IT WORKS:** This business-mapping software for the Tablet PC facilitates meeting preparation and project planning.

CUSTOMER SAMPLING: Charles Schwab & Co., National Public Radio

Netezza Corp.

CATEGORY: Data management

URL: www.netezza.com

LOCATION: Framingham, Mass.

TECHNOLOGY: Netezza Performance Server 8000 Series

BOW IT WORKS: Combines servers, storage and databases into a scalable appliance that enables complex data analysis.

CUSCOMER SAMPLING: Epsilon,

MicroStrategy Inc.

Continued on page 30

Continued from page 26

successful beyond your wildest projections, and you need to know it will scale to all the load and trading partners that you'll run on it, he says. Run a proof-of-concept experiment to know that your selection can carry the weight, Dupree adds.

WHAT'S IN STORE: GXS has successfully developed a combination of data format translation pieces and integration pieces, says Eric Austvold, an analyst at AMR Research Inc. in Boston. "The breadth of their offering has been very well received by customers to date," he says.

"I would see EAI [enterprise application integration], ETL [extract, transform and load software], EDI all coming together under one umbrella," says Austvold. "Today there isn't anyone who does all of that really well. But expect to see GXS, Informatica and Sterling Commerce making a play for this big time in the next 36 months."



BY THOMAS HOFFMAN For years, manufacturers have relied on value-added networks

(VAN) to help them

buy parts and materials electronically from suppliers. Although the cost of a VAN is high, many companies choose to pay the price rather than risk the security and reliability problems of other

PROJECT PAYBACK

- Reduced reliance on value-added networks.
- Anticipated savings of hundreds of thousands of dollars in VAN costs.

types of Internet-based commerce.

One automotive manufacturer, however, was determined to drive down its VAN costs. In 1999, the carmaker, which requested anonymity, began using a self-contained EDI system from GXS.

The plan was to use GXS's Enterprise System to connect one of its manufacturing plants with all of its VANs and suppliers "while growing into a self-contained system," says the automaker's data communications analyst.

The carmaker has done that — and more. The company is using a mailbox system available through Enterprise System to interface with its suppliers via the Internet. It expects to save "hundreds of thousands of dollars" in avoided VAN costs, says the IT analyst.

Three months ago, the manufacturer moved two of its biggest suppliers to the Enterprise System, a move that's

expected to help it save \$60,000 to \$70,000 in annual VAN costs. By year's end, the automaker hopes to shift its other three top suppliers to the system, which should net another \$100,000 in VAN-avoidance cost savings.

The carmaker runs GXS's Enterprise System on Hewlett-Packard Co. Class L HP-UX Unix servers. Two HP-UX Class A servers power the gateway that about 200 end users from supplier companies use to access the system.

After installing the mailbox system in October 2002, the company began a three-year total-cost-of-ownership analysis. Including software, hardware, maintenance and personnel costs, the company estimates that the system is able to handle the same volume of transactions that it would have with VANs at about two-thirds the cost.

The carmaker expects to move 25 to 30 suppliers onto the Enterprise System by the third quarter of 2004. It will still use a VAN, primarily to interface with banks and to support a handful of low-volume suppliers. Because the company is planning to drop the \$1,200 per-month frame-relay connections it uses to support the VAN and shift to a Secure File Transfer Protocol format, the cost to support the low-volume suppliers will be miniscule, says the carmaker's IT analyst.

EnvoyWorldWide Inc.

CATEGORY: CRM

URL: www.envoyworldwide.com

LOCATION: Bedford, Mass.

TECHNOLOGY: EnvoyExpress

HOW IT WORKS: EnvoyWorldWide's flagship service lets users communicate time-sensitive personalized information to many individuals instantly and simultaneously. It consists of a scalable interaction management platform, real-time tracking capabilities and a two-way, actionable response mechanism.

PROJECT PAYBACK

- Provided security, redundancy and backup to an automated communication system.
- Enabled the system to send several thousand messages per hour.

CUSTOMER SAMPLING: Symantec Corp., Southern California Edison Co.

WHAT'S IN STORE: Notification services are an emerging technology area, says Thornton May, an industry analyst in Biddeford, Maine, and a *Computerworld* columnist. The technology is now used only for emergencies and to maintain regulatory compliance but will soon become more mainstream, he says.



BY MARC L. SONGINI
The Los Angeles-based
Partnership for Academic and Community
Excellence (PACE), a

school-to-parent communications system built for the K-12 education market, needed a fast and efficient way to notify parents about issues such as school functions, student attendance and security crises.

Working with EnvoyWorldWide, PACE was able to replace an in-house database system with an Internet-based communications service that creates and instantly sends voice communications to parents at up to six different contact numbers, says John Gamba, CEO of PACE. The new system boasts security, redundancy and back-up and can send out several thousand

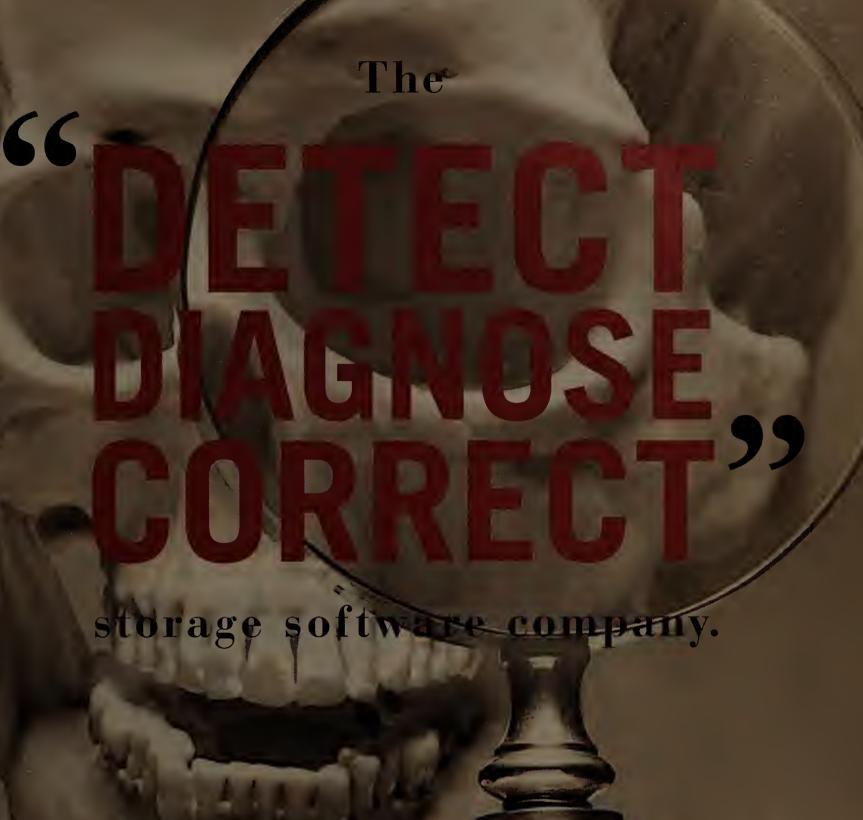
messages an hour, and as many as 3 million per year.

EnvoyWorldWide has "been a great partner," says Gamba. "Not only do they have a great system technically, but they've been a very good strategic partner to us as we prospect and contact school districts."

PACE offers its services in 650 school districts and sends messages to more than 1 million parents nationwide per year.

The system is a good fit for companies that must communicate with employees or clients around the clock, via a host of hardware and software systems. According to EnvoyWorldWide, services are hosted in two redundant facilities that offer virtually 100% availability and can deliver millions of text and voice messages daily.

The company offers two services: EnvoyExpress contains the core messaging service engine and relies on database management, speech and XML technologies for Web-based communications via phone, fax or e-mail to multiple devices. EnvoyProfiles, built on EnvoyExpress, allows users to receive messages on the PC or device of their choosing.



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TECHNOLOGY

Continued from page 28

Network Appliance Inc. CATEGORY: Storage

URL: www.netapp.com LOCATION: Sunnyvale, Calif. **TECHNOLOGY: FAS900 Series HOW IT WORKS:** This storage system

manages data in multiple environments and enables administrators to allocate space from one environment to another.

CUSTOMER SAMPLING: ESC Entertainment, Bank of America Corp.

Peribit Networks Inc.

CATEGORY: Networking **URL:** www.peribit.com LOCATION: Santa Clara, Calif.

TECHNOLOGY: Molecular Sequence Reducer **HOW IT WORKS:** The software increases network capacity by eliminating 70% to 90% of the data flowing over WANs, cutting carrier bandwidth spending.

CUSTOMER SAMPLING: Truman Arnold Cos., British American Tobacco PLC

Pronto Networks Inc.

CATEGORY: Mobile/wireless **URL:** www.prontonetworks.com LOCATION: Pleasanton, Calif. **TECHNOLOGY:** Hotspot Networking System

HOW IT WORKS: A support system for large-scale public WLANs, it enables costeffective deployment and provisioning of Wi-Fi hot spots.

CUSTOMER SAMPLING: DeSilva Properties

Prescient Systems Inc.

CATEGORY: Supply chain/ERP URL: www.prescientsystems.com LOCATION: West Chester. Pa. **TECHNOLOGY:** Prescient 5

HOW IT WORKS: The software suite enables demand, supply, collaboration and performance measurement, with a Webbased module for dynamic reporting.

CUSTOMER SAMPLING: Binney & Smith

Inc., Domino's Inc., Tropicana

CATEGORY: Security URL: www.qualys.com

LOCATION: Redwood Shores, Calif. TECHNOLOGY: QualysGuard

HOW IT WORKS: This automated Web service for network security lets users audit

network security from any browser in the company and then remediate vulnerabilities.

CUSTOMER SAMPLING: L'Oreal Group. Mercedes-Benz USA LLC, TIAA-CREF

Continued on page 34

Traq-wireless Inc.

CATEGORY: Mobile/wireless

URL: www.traq.com

LOCATION: Austin

TECHNOLOGY: Mobile Communications

Management software

HOW IT WORKS: Traq-wireless' software reduces the cost and complexity for companies conducting business with mobile devices and wireless services, including cellular phones, handhelds, laptops, pagers, remote-access services and other untethered devices.

CUSTOMER SAMPLING: Burlington Northern Santa Fe Railway, Cadbury Schweppes PLC, FedEx Freight, Nova Chemicals Corp.

TIP: Any enterprise with a large number of cellular users - 1,000 or more - and signed up for service from multiple carriers should consider using a service like Traq's, says Peter Firstbrook, an analyst at Meta Group Inc. in Boston. Companies that use only one carrier probably don't need it, he adds.

WHAT'S IN STORE: Craig Mathias, an analyst at Farpoint Group in Ashland, Mass., says demand for Traq's service could pick up in November, when users will be able to switch from one cellular carrier to another without changing phone numbers, thanks to a mandate from the Federal Communications Commission allowing number portability.

Firstbrook says Traq is the leader in this new and still-narrow field, but competition is growing. San Diego-based ProfitLine Inc., which audits local and long-distance phone bills, has added cellular auditing to its portfolio, Firstbrook says, while Digital Reliance Inc. in Denver and Avotus Corp. in Oakville, Ontario, audit and manage cellular bills.

BY BOB BREWIN

Two years ago, Ernie Liu, finance director at The Kleinfelder Group Inc., had a simple ap-

proach to the 3-foot stack of paper that represented the San Diego-based construction company's monthly cell phone bills. He just paid them, without much analysis.

Today, Liu says, he can easily review and optimize cell phone plans for close to 2,000 employees, thanks to Tragwireless, which has developed online tools that help companies manage airtime for cell phones and mobile

Cell phone carriers such as AT&T Wireless Services Inc. in Redmond, Wash., and Nextel Communications Inc. in Reston, Va. — both of which Kleinfelder uses — sell cellular airtime in buckets of minutes. Buy too few

minutes for an employee, and you get stuck with hefty "overage" charges. Buy too many minutes for another employee, and the carrier makes out well from the "underage."

Liu uses the Traq analytical tools to monitor monthly cellular and pager usage per employee, which in turn allows him to spot at a glance overage or underage for individual users. Liu says Traq has helped Kleinfelder cut its average per-minute cell phone charge from 28 to 13 cents.

Another user, Romolo Pallini, director of networks and telecommunications at Getronics NV, an Amsterdambased computer and IT services company, says the Traq service has allowed him to drive down airtime costs for 3.000 devices used in the U.S. -2.000phones and 1,000 pagers — in some cases to less than a dime per minute, with an annual savings of \$300,000.

Pallini says Traq also allows him to better manage costs by buying buckets of off-network and expensive roaming minutes and pooling airtime minutes among users.

Pallini adds that he has never encountered such a powerful telecommunications management tool and that he

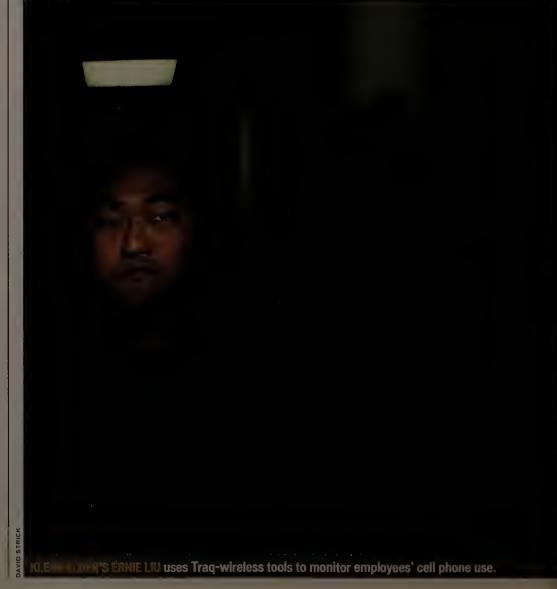
PROJECT PAYBACK

- Allows optimization of cell phone plans for close to 2,000 employees.
- **■** Cut average per-minute cell phone charge from 28 to 13 cents.

wishes Traq could devise a way to use it to monitor Getronics' entire global telecommunications infrastructure.

Jim Offerdahl, Traq's president, says the technology is based on sophisticated patented and patent-pending algorithms. Such algorithms help companies get more from their cell phone plans by comparing geography and job requirements (including travel, which dictates a national vs. regional plan) against a database of 14,000 rate plans.

The code is primarily written in Java, with data stored in Oracle databases. Traq operates as an application service provider, with hosting provided by IBM.





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Extended Systems Inc.

CATEGORY: Mobile/wireless

URL: www.extendedsystems.com

LOCATION: Boise, Idaho

TECHNOLOGY: OneBridge Mobile
Platform (formerly XtndConnect Server)

HOW IT WORKS: OneBridge enables a variety of devices to access up-to-the-minute corporate data and applications, whether through a dial-up synchronization cradle, a wireless connection or a browser.

"Push" technology enables wireless users to receive e-mail in real time. One-Bridge also provides IT with tools to secure and manage the mobile environment, as well as a development platform for mobile applications.

CUSTOMER SAMPLING: CBS Broadcasting Inc., Daimler Chrysler AG, Major League Baseball, Chase Manhattan Bank

TIP: Veteran handheld device users are accustomed to syncing their devices locally through a desktop computer. A "client deployment wizard" included with OneBridge can help change this work habit. It enables IT to preconfigure user settings on mobile devices, such as automating the initial connection and disabling local synchronization capabilities.

WHAT'S IN STORE: "Extended has always been known for its sync technology, but expanding that to include real-time wireless access and push e-mail brings a strong offering to customers with multiple requirements," says Stephen Drake, an analyst at IDC in Framingham, Mass.

But while some analysts are optimistic about the future of wireless e-mail, "it's difficult to perform an ROI [analysis] on it," says Adam Zawel, who covers wireless/mobile enterprise computing at The Yankee Group. "You have a feeling that it improves productivity, but it's difficult to justify in these tight budget times."

At the same time, Zawel says, Bostonbased Yankee Group estimates that about a quarter of all businesses plan on doing something with wireless over the next two years, doubling the number of wireless users today.



BY MARY BRANDEL When Mike Williams, CEO of M.R. Williams Inc., wanted a competitive edge for his

wholesale food distribution company, he bypassed the obvious solutions. "He said, 'We can compete on price or service or fast delivery, but everyone else is doing the same sort of thing,'"

PROJECT PAYBACK

■ 34% increase in sales; 60% reduction in time to manage product returns and credits.

 Customers report increased profits, improved inventory control and increased efficiencies.

remembers Jane King, IT director at the Henderson, N.C.-based company. "His idea of how to keep customers was to provide them with a tool to handle inventory much more easily."

That's where Extended Systems' OneBridge comes in. It provides the bridge between corporate data housed on the company's AS/400 system and order processing/inventory management applications housed on Palm devices that are distributed to 150 M. R. Williams customers, mainly convenience stores.

Twice a week, the convenience stores sync their Palm devices with the AS/400 over a dial-up connection, downloading current pricing data, information on hot-selling items, a suggested order list and current accounts receivable. They go off-line to actually create their orders, using the inventory management application on their handhelds, and then go back online to transmit the orders to the AS/400.

Sales representatives also carry the Palm devices, using them to place orders, view accounts receivable and process credits. OneBridge allows the stores and reps to receive and transmit e-mail and data over a wireless connection, but "many of our convenience stores are not where wireless works," King says. M.R. Williams has no current plans for wireless connections, "but there are certainly possibilities," she adds.

Since implementing the system, M.R. Williams has increased sales by 34% and seen a 60% reduction in the time required to manage product returns and credits. Its customers, meanwhile, report increased profits, improved inventory control and increased efficiencies.

Brandel is a freelance writer in Grand Rapids, Mich. Contact her at mary.brandel@comcast.net.

Zone Labs Inc.

CATEGORY: Security

URL: www.zonelabs.com

LOCATION: San Francisco

TECHNOLOGY: Zone Labs Integrity

HOW IT WORKS: This network security software uses security agents that run on PCs and laptops to enforce and manage security policies and control network access to the machines. The idea is to block hackers and stop Trojan horses, viruses and malware from spreading from one PC to another.

The server software manages all endpoints and has the capability to run various data logs and application-inventory reports. It provides a number of predefined policies that range from a reportonly mode to restrictive policies, like the "paranoid" mode.

CUSTOMER SAMPLING: Herman Miller Inc., Archdiocese of Seattle, 24 Hour Fitness Worldwide Inc.

TIP: James Casper, network engineer at 24 Hour Fitness, recommends working closely with Zone Labs while installing the security software to avoid cultural shock. "There can be some tricky situations to work through," he says, if the product isn't introduced in a way that matches how a company's employees feel about security.

WHAT'S IN STORE: "The idea of providing preventive control over activity and monitoring activity and making policy decisions based on that is certainly a solid approach," says Pete Lindstrom, an analyst at Spire Security LLC in Malvern, Pa. "I really don't think antivirus is going to go away completely, but I'm hard-pressed to come up with a situation where people shouldn't have personal firewalls on their desktops."

Zone Labs Integrity also includes the ability to actually manage the security policies for many different clients from a single point. "That's the bane of existence for desktop administrators," says Lindstrom.



BY JEAN CONSILVIO With doctors and fitness experts recommending that people work out

three to six times a week, it's no wonder that the health club business is booming. 24 Hour Fitness Worldwide Inc. has expanded its San Ramon, Calif.-based fitness-center chain to more than 300 clubs in 16 states since 1983, and each location needs systems protection

from worms, viruses and hackers.

James Casper, the club's network engineer, was in the early stages of a virtual private network/client rollout about a year ago when he chose Zone Labs Integrity to protect his remote users.

The centrally managed, personal firewall technology offers a choice of two security clients: Integrity Agent, which enables central IT policy management with transparent security for users, and Integrity Flex, which lets end users control their own security policies when their machines aren't connected to the corporate network. Casper uses Integrity Flex, which gives him both on- and off-network profiles.

Casper says he has also customized some of the security policies and programmed his Integrity server to "discovery" mode. In other words, he's still tracking down which applications are running on which machines so he can better define those policies or add more.

"We've had a few complications, mostly end-user education, but we still believe the product is the right product to protect our users," Casper says. "Training is important." And there will always be users who aren't going to understand why access is blocked or what the pop-up alerts mean. Casper says he expects to spend time training those folks.

A couple of years ago, 24 Hour Fitness used a security product that didn't provide full capabilities for central management. "And one of the attractive things [about Zone Labs Integrity] is that we can [centrally] manage the product," says Casper.

The IT department hasn't reduced head count because of this efficiency, but he says the company didn't have to add to the approximately 120-member IT staff, either.

Looking ahead, Casper says, "there's probably a likelihood that we'd put this on every Windows-based platform in the company" after it's completely rolled out to all remote users.

PROJECT PAYBACK

Provides central management of network security.

 Doesn't require additional IT employees to manage.

OK, our marketing is not as good as our technology.

Business Intelligence Vendor Rating

	Marketing Rating	Technology Rating
MicroStrategy	***	****
Cognos	***	***
Business Objects	****	* * *

Source: Leading Industry Analyst (2003)

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Continued from page 30

Sarvega Inc.

CATEGORY: Application development

URL: www.sarvega.com LOCATION: Burr Ridge, III. TECHNOLOGY: XPE 2000

HOW IT WORKS: XML appliances that decouple XML processing from the infrastructure and move them into the network.

CUSTOMER SAMPLING: 3Com Corp., Fujitsu America Inc., Sinai Hospital Network

Stratus Technologies Inc.

URL: www.stratus.com LOCATION: Maynard, Mass. **TECHNOLOGY: Stratus ftServer**

HOW IT WORKS: It enables fault-tolerant continuous processing through the failure of a component or CPU, with no downtime or loss of in-flight transactions, for example.

CUSTOMER SAMPLING: United Parcel

Service Inc.

leros

CATEGORY: Security URL: www.teros.com

LOCATION: Santa Clara, Calif. TECHNOLOGY: Teros-100 APS

HOW IT WORKS: A Web application protection system, it blocks unacceptable behaviors, including known and undocumented attack methods.

CUSTOMER SAMPLING: ChevronTexaco Corp., WebEx Communications Inc.

Wavelink Corp.

CATEGORY: Mobile/wireless URL: www.wavelink.com LOCATION: Kirkland, Wash, TECHNOLOGY: Mobile Manager **HOW IT WORKS:** This wireless network management software enables administrators to deploy, secure and manage wireless

networks and connected mobile devices. **CUSTOMER SAMPLING:** Brooks Brothers. Ford Motor Co., Toyota Motor Sales USA Inc.

XcelleNet Inc.

CATEGORY: Mobile/wireless URL: www.xcellenet.com LOCATION: Alpharetta, Ga. TECHNOLOGY: Afaria

HOW IT WORKS: The technology manages devices ranging from laptops to smart phones all on one platform, using Microsoft's .Net. CUSTOMER SAMPLING: Chick-fil-A

ReefEdge Inc.

CATEGORY: Security

URL: www.reefedge.com

LOCATION: Fort Lee, N.J.

TECHNOLOGY: ReefEdge Connect System

HOW IT WORKS: ReefEdge's Edge Controllers are packet-filtering hardware appliances that enforce wireless access control rules, implement bandwidth management and perform data encryption. They are centrally configured and managed by Connect Servers. Connect Servers and Edge Controllers can be tied together in pairs to ensure high availability. The products are part of ReefEdge's Wireless Services Fabric, designed to address issues such as security, management, radio frequency monitoring. mobility, alerting and reporting in a wireless environment.

CUSTOMER SAMPLING: Memorial Health System, California Lutheran University, Caterpillar Inc., Williams International Co.

TIP: Ensure that users are covered by at least two access points at any time or location in a wireless LAN. Positioning access points in this manner can ensure redundancy in the event that one access point fails.

WHAT'S IN STORE: In the short term, the need to secure wireless access will drive demand for products such as those from ReefEdge, says Craig Mathias, an analyst at Farpoint Group in Ashland, Mass. But in the longer term, it's the WLAN mobility enabled by such technologies that will drive user interest. Mathias predicts.

ReefEdge's Wireless Services Fabric lets users maintain secure wireless connectivity even when roaming. "This sort of seamless mobility between networks over a secure authenticated link is going to be of great interest," Mathias says.



BY JAIKUMAR VIJAYAN When Memorial Health System decided to implement a wireless LAN as part of an

effort to give doctors more efficient access to patient records, data security and privacy were the top issues to be addressed.

The Springfield, Ill.-based health system also had to ensure high availability, high-speed roaming and session persistence to enable uninterrupted service for its 360 physicians as they roamed about the 1 million-square-foot Memorial Medical Center campus.

"The idea was to totally saturate the medical center and nearby buildings with wireless signals so that doctors had access to patient data securely from wherever they were [on the hos-

PROJECT PAYBACK

Ensured high availability, high-speed roaming and session persistence to 360 doctors on a 1 millionsquare-foot campus.

Its controllers protect 100 wireless access points.

pital campus]," says O.J. Wolanyk, Memorial Health's CIO.

The goal was to enable doctors to use devices such as Pocket PCs, tablet computers and smart phones, instead of having them line up to use stationary terminals on specific floors, says Wolanyk. Not only is this approach more efficient, but it's also cheaper than buying stationary equipment, he says.

"I wanted to create an environment in which I could say, 'Here's a mobile device. You can try it out anywhere in the enterprise," Wolanyk says.

ReefEdge's Connect System plays a

central role in helping Memorial secure and manage its wireless electronic medical records system, says Kyle Links, a systems programmer at the hospital.

Memorial has deployed eight of ReefEdge's Edge Controllers to protect its 100 wireless access points, which are based on Cisco Systems Inc. technology. "The Edge Controllers are essentially a distributed firewall for the wireless environment," Links says. "The first thing that someone sitting in the parking lot trying to detect the network would run into is the firewall."

Four of the Edge Controllers are deployed in standby mode to allow for high availability. The two Connect servers that manage these devices are also tied together in a high-availability fail-over configuration, Links says.

Mobile devices that try to access the network are first authenticated by the Connect server, which then provisions and monitors application access based on policies.

The technology also ensures connectivity as the user roams through the hospital's multiple subnetworks and makes sure that if a session is dropped, the user can resume it from where it was disrupted.

ClearForest Corp.

CATEGORY: Data management

URL: www.clearforest.com

LOCATION: New York

TECHNOLOGY: ClearTags

HOW IT WORKS: ClearForest's technology assimilates text data of any size and structure, extracts key terms, assigns the terms to meaningful categories (a taxonomy) and establishes their interrelationships. By combining semantic, statistical and structural analysis, ClearTags automatically classifies documents and discovers pertinent entities, facts, events and relationships buried deep within the text.

CUSTOMER SAMPLING: Credit Suisse Group, General Motors Co., Dow Chemical Co., Eastman Kodak Co.

TIP: "Get ugly early," says ClearForest CEO Barak Pridor. In other words, figure out what you need to get done and what your requirements are from your content, then put a solution in place that will address the problem.

WHAT'S IN STORE: "What ClearForest does is part of a solution," says Laura Ramos,

an analyst at Giga Information Group Inc. in Santa Clara, Calif.

"The problem that people are struggling with is how to get their information organized," she explains. "In the future, this technology plays an important role across a lot of different types of applications, whether focused specifically on content management, knowledge management or even business intelligence and analytics and decision-making. So the ability to add structure to unstructured information is clearly a missing piece to that."



BY LINDA ROSENCRANCE After merging with Union Carbide Corp. in February 2001, The Dow Chemical Co.

had to figure out how to index and categorize the several hundred thousand technical reports it inherited.

The reports covered an 80-year period and included information from companies acquired by Union Carbide. Most of the collections were in paper form. In addition, documents and chemical substance registries were scattered across many disparate collections, and document manage-

Continued on page 36

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TECHNOLOGY

PROJECT PAYBACK

- Fully integrated Union Carbide's document collection with Dow's.
- Enabled search capabilities for litigation support, divestitures and R&D projects.

Continued from page 34 ment and indexing practices were inconsistent.

"We needed to find a way to integrate those reports into the Dow system, preferably without hiring 100 human indexers to sit and read through them," says Anne Rogers, leader of proprietary information services at Midland, Mich.-based Dow.

She says Dow was able to use ClearForest's technology to do automatic indexing and categorizing by document type and then set up rules for understanding the chemistry.

Rogers says Dow worked with ClearForest, which tuned and developed its ClearTags software to index all of the company's content. Before doing that, however, Dow had to digitize the reports so the ClearForest tools could read them electronically.

Rogers says ClearForest was able to take all the content and sort it by document type — reports that needed to be saved for a long time vs. reports to be saved for a short

The second step was to teach the autotagger about chemistry and use some existing chemical indexes.

"[We] set it up so it could read through these reports and say, 'OK, here's what the report's about,' "Rogers says. "We actually did this in conjunction with human indexers, so it was a machine-aided indexing process rather than just purely automatic." ClearTags was able to speed up the human interaction component, she says.

Today, the entire Union Carbide collection is fully integrated with Dow's electronic collection system that provides search capabilities for litigation support, divestitures, and research and development projects, which are mission-critical to Dow.

Sonic Software Corp.

PARENT COMPANY: Progress Software Corp.

CATEGORY: Enterprise software

URL: www.sonicsoftware.com

LOCATION: Bedford, Mass.

TECHNOLOGY: Sonic Enterprise

Service Bus (ESB)

HOW IT WORKS: ESB is an open-standardsbased system for allowing historically proprietary systems to share data through the use of Web services, XML and intelligent routing. Its scalability is derived from a robust messaging infrastructure and Sonic's architecture, which is based on the notion of "service containers."

CUSTOMER SAMPLING: Bank of America Corp., Goldman Sachs & Co., KeySpan Corp., Siemens AG, Northrop Grumman Mission Systems

TIP: Some things to consider in an ESB system include a security infrastructure that allows authentication, authorization and encryption capabilities across the ESB as well as easy integration of Web services.

WHAT'S IN STORE: Dennis Byron, an analyst at Framingham, Mass.-based IDC, says ESB technology will make intercompany transfers a lot easier. It has the potential of ushering in the idea of "e-community," or "business-to-business e-commerce on a grand scale, not just point-to-point business-to-business, but multiple points of business-to-business," he says.

A recent IDC report said that reliance on standards-based technologies is an important aspect of a successful distributed enterprise computing strategy and is "key to success."



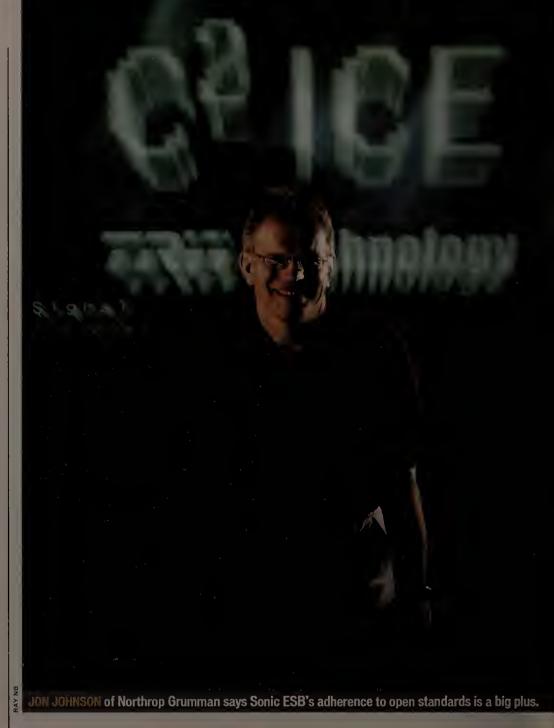
As you might expect, a combat unit's IT requirements are critical. They can include iden-

tifying a threat, deciding whether action is needed, notifying the chain of command — even firing a mortar or vectoring a plane, says Jon Johnson, chief engineer at military defense contractor Northrop Grumman Mission Systems in Colorado Springs.

Meeting those critical IT needs takes systems integration. In the military, "whatever it is, you've got to take care of it," says Johnson.

To accomplish this, Northrop Grumman has been using middleware developed by Sonic Software that allows applications in heterogeneous enterprises to share data.

This technology, called Enterprise Service Bus (ESB), is built on Sonic's messaging software and uses a variety



of open standards, such as Java, SOAP and XML, to link together disparate applications.

Before ESB was used, custom interfaces had to be built, but they were expensive and incomplete, says Johnson. Open standards reduce cost, and users can often rely on the skills of their own IT staffs to deploy and manage this integration approach, he says.

Johnson particularly likes Sonic's

PROJECT PAYBACK

- Reduces cost through open standards.
- Existing IT staff can manage and deploy the data-sharing system.

adherence to standards.

"They really abide by the specifications and the standards," he says.
"You can use their product without being sucked into proprietary additions to APIs [application programming interfaces]."

Johnson says he thinks ESB will help the military reach its goal of developing a Global Information Grid Enterprise Services architecture that will function as a "big data broker" to which all of the military's services can publish.

In a report released this past March, IDC predicted that ESB "will revolutionize IT and enable flexible and scalable distributed computing for generations to come." The report called ESB a flexible, reliable infrastructure that "can enable a new type of corporation—one that is not held captive to rigid IT capabilities, but rather can respond almost instantaneously to meet business opportunities."





MANAGEMENT

ROI Missing a Big Target

ROI calculations are all the rage. But IT consulting costs that run into the millions of dollars rarely get ROI scrutiny. Oops! **Page 42**



Global Patchwork

MetLife is taking an unusual approach to its global IT rollout: It's selecting the best technologies from vendors around the world. **Page 40**

OPINION:

Mergers: IT Disaster or IT Opportunity?

Norbert J. Kubilus says IT still gets left out of the premerger discussions, but he lays out a road map for managing the postmerger transition and consolidation. **Page 46**

CIOs need to defuse the legal risks of security breaches, privacy invasions, data destruction and software piracy.

IOS STRUGGLING WITH
the technical implications of the Health Insurance Portability and Accountability Act and the Sarbanes-Oxley Act may be wondering what other ticking bombs are hidden under the IT landscape. We asked lawyers who specialize in technology to identify some of the more explosive risks and mitigation strategies. Here's what they said:



Lega

Security

In the realm of IT security, there are new legal risks every day. California Senate Bill 1386, which took effect July l, requires that companies conducting business in that state notify California residents if they know or reasonably believe there has been a breach in security that might have put their personal information at risk. The purpose of the law is to enable customers to

Land Mines

By Kathleen Melymuka

take protective measures — such as informing their credit card companies — to minimize any damage.

WHY YOU SHOULD CARE

Your company doesn't need to be based in California or even have an office there to be affected, says Maureen Dorney, an attorney at Gray Cary Ware & Freidenrich LLP in Palo Alto, Calif. If you have customers in California, own or license data containing personal information on such residents, or even maintain such data on behalf of another company, this law affects you. If your company suspects a breach and fails to quickly notify customers who suffer as a result, the law authorizes them to institute civil actions against your company to recover damages.

From a legal standpoint, Dorney says, your company is better off notifying customers even if you're not certain their data has been compromised,

Legal Land Continued from page 37 Mines

because the customers are expected under law to take action upon notification, and your liability is lessened.

"But most companies would consider that to be a very unpleasant and damaging disclosure," she says. Notification could lead to bad publicity, a dip in stock price and even shareholder suits over ineffective security. As a result, Dorney says, "historically, companies have bent over backward" to keep security breaches secret.

"Two things are going on that the business has to balance: the potential legal liability and the business realities," she concludes.

WHAT YOU CAN DO

- Make sure your board of directors understands security risks and approves the appropriate level of funding to address them properly.
- Work with your legal department to determine whether the law affects your company.
- Develop or amend information security policies to guide company employees on how to handle security breaches under the new law, and train employees on the new requirements.
- See that security policies and procedures are followed.
- Consider implementing encryption technology, which will eliminate the need to comply with the disclosure requirement.
- Develop a system for coordinating with law enforcement authorities in the event of a security breach.

Data Retention

Electronic document retention poses problems never dreamed of in the days of paper and file cabinets, says Cliff Greene, an attorney at Greene Espel PLLP in Minneapolis. "We're all concerned about the lack of uniform standards governing preservation issues," he says. The policy question facing every business, he says, is "whether to keep information a long time for protection or for the most minimal term because you don't want to have to be litigating ancient history."

WHY YOU SHOULD CARE

If your company becomes involved in a lawsuit, your electronic documentretention policy suddenly becomes an issue. "A standard part of litigation wars now is to request all data and

The Feds Are Watching

The Federal Trade Commission is taking online privacy seriously. In addition to its June enforcement action against Guess Inc., the FTC previously took action against Eli Lilly and Co. and Microsoft Corp. Each company was obliged to change its business practices to adopt comprehensive, stringent, online security measures.

The three enforcement actions – which provide a road map for what other compa-

: nies should do - are described at the following Web addresses:

- www.ftc.gov/opa/2003/06/guess.htm
- www.ftc.gov/opa/2002/01/elilitly.htm
- www.ftc.gov/opa/2002/08/
 microsoft.htm
 In addition, the FTC provides a security checklist at:
- www.ftc.gov/bcp/conline/pubs/ buspubs/security.htm

e-mail regarding the transaction," says Doug Ey, an attorney at Helms Mulliss & Wicker PLLC in Charlotte, N.C. If the CIO can't explain the company's document-retention policy, or if the policy is administered haphazardly or inconsistently, innocent deletions can seem sinister.

Not only do you need a policy about how long data will be retained, Greene says, but you also need to know how to effectively suspend that policy when your company needs to preserve data relevant to litigation. "This can be very difficult," he says, "because you're not just dealing with main systems, but also with all the different ways in which data can be stored."

If relevant data is inadvertently destroyed, the company can be charged with "spoliation of evidence," and consequences can be as severe as if your company had defied a court order, says Greene. Even knowing when you need to preserve data can be complicated, he says. In some states, you're notified to do so; in others, just the threat of a lawsuit requires you to preserve data. And since you're not always sued in your own state, you need to know the rules in other states as well.

WHAT YOU CAN DO

- Consult the guidelines of the Sarbanes-Oxley Act and search the Web for additional document-retention protocols.
- Work with your legal department and business colleagues to develop a policy that makes sense.
- Make sure the policy is applied consistently regardless of a particular document's content or location.
- Develop a standard plan for how to effectively suspend the policy to preserve documents in the face of lawsuits.

Privacy

On June 18, the Federal Trade Commission announced an enforcement action against Guess Inc. involving online se-

curity. According to the FTC complaint, Guess's online privacy policy assured customers that their information was safe, but in reality, its databases were vulnerable to common hacking strategies and the company had failed to take "reasonable and appropriate measures to secure and protect the databases."

The FTC concluded that Los Angelesbased Guess hadn't lived up to its privacy assurances and had therefore violated FTC regulations. It required that Guess establish a "comprehensive information security program" and specified the components of that program (see below). If Guess fails to comply, each violation is punishable by a civil penalty of up to \$11,000 per day for as long as the violation lasts.

WHY YOU SHOULD CARE

What happened to Guess could happen to your company. "When you make public statement on what kind of security and privacy protection you have, you've created a contract with the public," Dorney explains. "It can be bad for a company if it makes promises it can't keep." Private lawsuits and class-action suits are also possible, she says, adding, "Potentially, there's even fraud if the company made statements it knew were not true."

WHAT YOU CAN DO

The steps the FTC required for Guess can serve as guidelines for any prudent company. Here are some of them:

- Designate an employee to head the online security program.
- Conduct a comprehensive assessment of the risks to personal information security.
- Design safeguards to control the risks identified in the assessment.
- Monitor the safeguards' effectiveness and adjust them as needed.
- Obtain periodic audits by independent, qualified professionals attesting that the safeguards adequately protect consumer information.

Software License Violations

"People expect problems with sexy things like security and privacy, but based on my experience in lawsuits involving CIOs, the biggest litigation risk is still the nuts and bolts" such as software piracy or violating a software license, says Ey. "Too many users using software in too many locations — that's ground zero for lawsuits."

Despite the publicity this issue has received, wherever there's a software license, there's still ample opportunity for a copyright infringement, attorneys say. "It's an issue of asset management and failure to manage," says Brian Balow, an attorney at Dickinson Wright PLLC in Detroit. "That is a real and significant risk all CIOs face."

It can happen easily, Balow says. For example, a bare-bones departmental budget can lead a manager to copy software. "If the company doesn't have a standard procedure in place to monitor what they have installed, the CIO has no idea," he explains. Then a disgruntled employee calls the vendor or the Business Software Alliance (BSA) and reports the infringement.

WHY YOU SHOULD CARE

The softening economy may be hardening vendors. "I've seen an increase in activity," Barlow says, adding that companies he knows have recently been approached directly by Oracle Corp., Microsoft Corp., SAS Institute Inc. and the BSA.

If they come calling, don't expect a slap on the wrist. "I've never seen them say, 'Stop and we'll let you go,' " Balow says. And your liability can be huge. "We're talking literally millions of dollars," he adds.

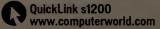
WHAT YOU CAN DO

- Understand your license agreements.
- Educate upper management about the importance of keeping the company honest, and enlist their support in the effort.
- Keep a good inventory of software and hardware.
- Ask your big vendors to provide resources for an annual accounting of your software use, and buy additional licenses as needed. "They're getting what they want and you're not getting sued," Balow says.

Melymuka is a Computerworld contributing writer. You can contact her at kmelymuka@yahoo.com.

PRIVACY RESOURCES

For news and columns on privacy issues, go to:



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COMPUTERWORLD September 22, 2003

Instead of taking a U.S.-centric approach. MetLife is selecting the best technologies from wherever in the world they happen to be. By Melissa Solomon

SOMETIMES EVEN THE best ideas don't work when they're exported to other countries. Consider the embarrassment Coors is said to have faced when it decided to use the slogan "Turn it loose"

in beer advertisements around the world. In Spanish, so the story goes, the translation of the phrase meant "Suffer from diarrhea."

The challenges of globalization are something that insurance giant MetLife Inc.'s international team is learning to master as it presses forward in its quest to roll out a common technology infrastructure to MetLife offices in 11 countries.

"It really is revolutionary," says Steve Bozzo, who last month was named international CIO, a new position that he says is a testament to MetLife's commitment to its global strategy: to grow its customer base of 8 million worldwide to 30 million by 2010.

The revolutionary part is MetLife's approach to selecting technology. Most global operations leave out the "global" part and build systems at headquarters that are force-fit into worldwide offices. MetLife is using an international team to select the best technologies from vendors around the world and deploy those technologies as the global standard.

Instead of having a hodgepodge of systems in each country — or U.S.-mandated systems everywhere — MetLife selected its portals from Brazil and its underwriting system from the U.S., and it built a data center in Singapore (see map).

MANAGEMENT

At the center of MetLife's global platform is its common knowledge database, developed in Brazil. The common platform is modular, so MetLife can remove outdated systems, or systems that don't meet a particular country's needs, and plug in new ones.

The project began three years ago, when MetLife set up shop in Brazil. To pare the sky-high costs of starting a new business there, MetLife's international team pooled its knowledge and resources to piece together a new infrastructure.

The pilot went so well that when MetLife moved into India a year later, it replicated the Brazilian infrastructure with minor customization to account for India's different languages, regulations and currency.

MetLife seems to be heading down the right path, says Prashant Palvia, president of the Global Information Technology Management Association, a research group in Greensboro, N.C. He praised MetLife for allowing for 10% to 20% customization of the global platform in different countries, as well as its decision to implement the system one country at a time.

Palvia says MetLife was wise in choosing countries where the pilot's success rates would be high and in

taking extra time to get the infrastructure right in those countries so it could duplicate those successes around the world.

But now is the real test: rolling out the platform to the Korea and Mexico locations, which are already established businesses. "We're going from start-ups to mature organizations," says George Savarese, vice president of operations and technology. "The rubber meets the road."

Each week, MetLife's international team calls in to a teleconference at 8 p.m. Eastern time. That's 7 p.m. in Mexico City, 9 a.m. in Seoul and 5:30 a.m. in Bangalore.

"If you didn't do that, everything would be lost," says Savarese. "When you work in international, it's literally not 9 to 5. We kind of work 12-, 13-hour days just to make sure we're communicating."

Bar none, communication is the toughest part of the project, Bozzo and Savarese agree. They're learning Spanish, and foreign team members are learning English, but no one expects to master eight languages.

Travel time is another issue. Without frequent face-to-face visits, says Savarese, international projects are doomed to failure. "You really need to go there, to really be there, in their space, understanding where it's at," he advises.

Then there's training. MetLife has only a small team

of trainers to teach the IT departments from different offices the nuances of the global platform, and since they want to get the big countries in place first, the waiting list keeps growing. "The smaller countries are dying to get this [technology], and we have to say wait," says Savarese.

Part of the global plan is to consolidate MetLife's IT infrastructure by reducing its 300 to 400 servers to about 10 to 20 worldwide, which would yield big cost savings, Bozzo says. "And it simplifies the environment so much," he adds. "That's the key."

MetLife is also getting deep discounts on maintenance and license agreements because of its highvolume purchases. And since one team is working for 11 countries, the

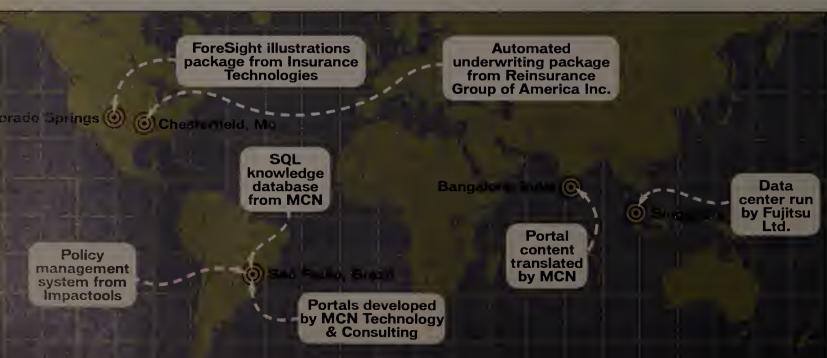
business can grow without simultaneously increasing the head count, according to Savarese. He says the international project's official return on investment of 26% is extremely conservative.

So far, worldwide insurance agents have embraced the system, says Bozzo. They've been able to speed through error-free claims at an unheard-of pace. "When you saw it happen in India, it was like, 'Wow!' " says Savarese. "The impacts are real."

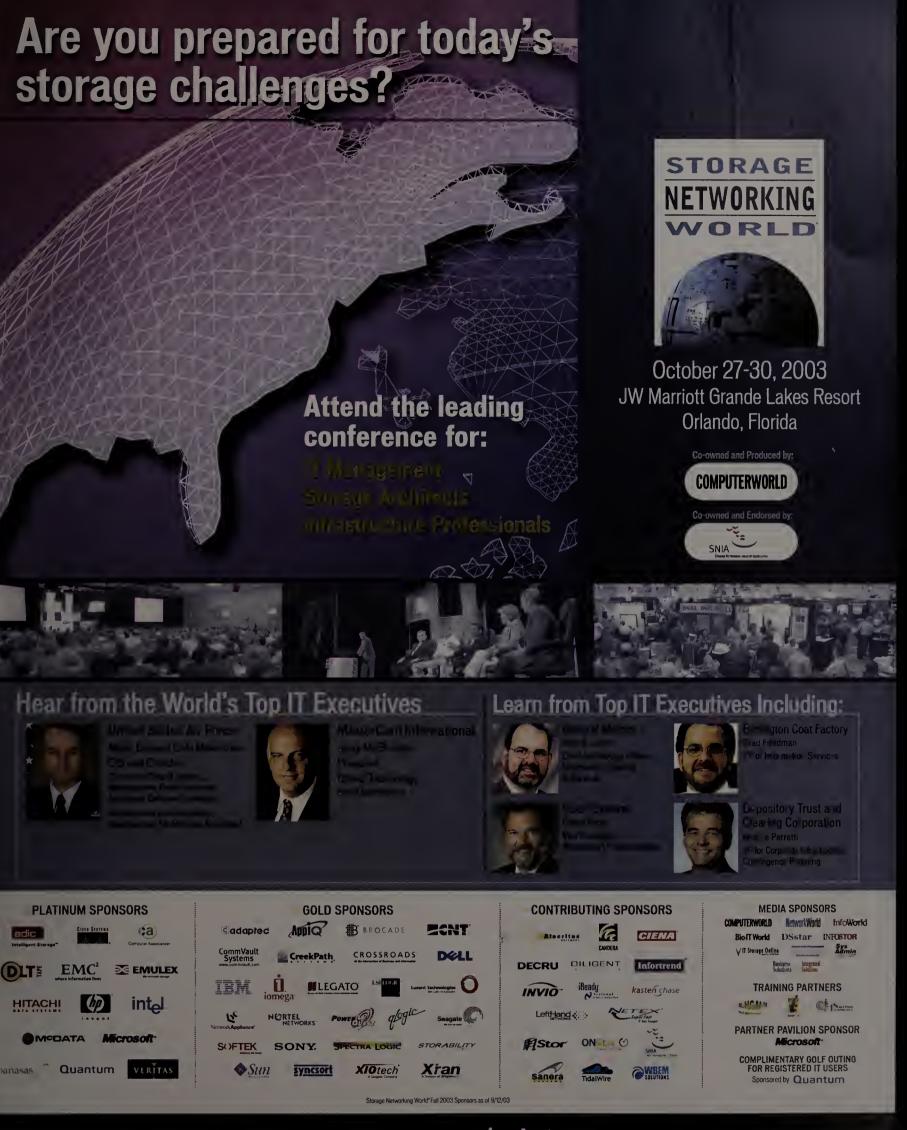
Solomon is a freelance writer in New York. She can be reached at melissasolomon7@hotmail.com.

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HE ECONOMIC DOWNTURN and corporate accounting fiascos have put increasing pressure on CIOs to justify every dollar spent on IT and do return-on-investment calculations. But a substantial portion of IT spending has so far escaped scrutiny.

Largely because of a lack of know-how, many IT executives are letting the millions of dollars they spend on IT consulting slip under the ROI radar, so those costs aren't factored into the business case for expenditures.

As IT infrastructures grow more complex, consulting services play a bigger part of the total cost of IT, says Rebecca Wettemann, vice president of research at Nucleus Research Inc., an ROI consulting firm in Wellesley, Mass. "The greater the business value of an application, the greater the need for expert services to help implement it," she says.

The trouble is, many companies are having a hard time coming up with metrics that demonstrate whether the consulting services are worth the extra cost. In fact, two-thirds of Nucleus' clients don't know how to justify the cost of consulting, says Wettemann.

The Credit Union of Texas, based in Dallas, is typical. It has used consultants to implement large-scale business-intelligence and imaging systems over the past several years. But consulting costs haven't been part of the budget analysis because they're too difficult to quantify, says CIO Jerry Thompson. "We wouldn't even attempt to calculate ROI on consulting engagements because we've never been able to figure out how to," he says.

Don't Even Ask

Few CIOs are even willing to comment on the topic. For this article, 20 top-level IT executives were asked to describe how they measure ROI from consulting services, and only two would discuss it.

Researchers at Kennedy Information Inc. in Peterborough, N.H., say that large companies typically spend up to 1% of their annual revenues on IT consulting, which is quite a bit, considering that most of the Fortune 500 earned more than \$3 billion last year.

"A CIO might not even want to know what the actual return is on a consulting contract. But the savvy CIO would want that calculation to be part of the project and would tie consulting costs to it," says Brad Smith, vice president of research at Kennedy Information.

In fact, the cost of consultants is often double or triple that of the hardware and software they help implement. That adds up when a CIO requests funding for a \$100 million ERP system.

"ROI from consulting has to be looked at through the larger prism of the product purchase," says Anna Danilenko, an IDC analyst. "Users are spending \$3 to \$4 on consulting services for every \$1 they spend on hardware and software."

Often, satisfactory payback on a technology purchase can't be realized without outside help. It's hard to achieve ROI when a new software system isn't up and running in a reasonable amount of time. In such situations, consulting can become a necessary expense that helps justify the total cost of a project.

That was the case for Roger Parks, CIO at J.R.

YES, Consultants Can Help

Trying to figure out how to cost-justify the use of IT consultants? ROI consulting firm Alinean recommends considering the benefits from using experienced consultants.

Good consultants can do the following:

■ Advance the use of best practices further and faster than the internal team could on its own.

- Help the business be more agile and scale up more quickly to meet market demands.
- Free internal labor resources from tactical deployments and management tasks.
- Ensure that projects are deployed on time, within budget and to specified requirements.
- Reduce the productivity and business losses from downtime.

Simplot Co., a \$3 billion global agricultural business in Boise, Idaho. Three years ago, the company hired IBM Global Services to help implement a J.D. Edwards ERP system. For Parks, the key ROI metric for the consulting portion of the project was simple: All he had to do to justify the cost was calculate the time he saved by using outside assistance.

"With our in-house resources, it would have taken three years, but IBM Global Services did it in one year," Parks says.

This turns out to be a common but rather elementary metric for calculating the ROI of IT consulting. If an expensive engineer can get a job done substantially faster than in-house personnel, the company comes out ahead. A single consulting engineer might be able to accomplish as much as three in-house engineers could, says Tom Pisello, CEO of Alinean LLC, an ROI consulting firm in Orlando.

"When you buy HP's SAN products, they can provide these superengineers to help set it up," he says. "They're more expensive than an in-house engineer, but they're also more effective."

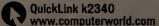
Whether or not consulting expenditures are worth the cost can also be measured in terms of the business value gained. Parks hired IBM consultants who had payroll, procurement and other types of expertise, and that helped his company get the most out of the ERP software. "The consulting enabled us to do the things that would allow us to achieve ROI. Just putting in the system wouldn't give us the same benefits," he says.

Wettemann puts it another way: "ROI is really a measure of delta. Measuring ROI from consulting services is a question of what I would have to do to get to the same point without them."

Webster is a freelance writer in Providence, R.I. He can be reached at john.s.webster@verizon.net.

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Volunteers Get A Career Boost

IT pros who work with the underprivileged find new skills, and new meaning, in their work. By Mark Hall

T PROFESSIONALS WHO do charitable volunteer work get a variety of benefits, including recognition in the workplace, new management skills and a good-looking line on their résumés. But the volunteers say it's really the feeling of doing good that motivates them to contribute their expertise to the less fortunate.

Nonprofit organizations like Geekcorps in North Adams, Mass., and Tech Corps in Maynard, Mass., recruit and place IT volunteers in underdeveloped nations and underfunded schools to help create and maintain a technology infrastructure so that emerging nations and U.S. schoolchildren can participate in the increasingly global and hightech economy. In the process, volunteers can pick up skills that will bolster their careers.

Eva Bradshaw begins her fourth year as a volunteer for Tech Corps this month at an elementary school in a tough neighborhood in Columbus, Ohio. Bradshaw and other members of the informal Ohio State University (OSU) Women in Technology group were concerned about the lack of interest young girls evince in computers, math and science — and decided to do something about it by volunteering with Tech Corps.

The women helped fourth- and fifthgrade girls learn about PCs, including software for word processing and Web design. The girls also disassembled and assembled hardware and learned what each computer part does. Bradshaw says their excitement about the after-school project was infectious.

"It energized me working with them, despite it being after my full workday," says Bradshaw, an OSU technology director.

She says it also boosted the reputa-

tion of her group on campus. "Within the CIO's office, it enhanced our professional image, because we were able to put the project together and make it work," she says.

Karen Smith, executive director of Tech Corps, says the nonprofit group screens volunteers for nearly 2,000 schools in 20 states, but she claims that the current fiscal crises among the states have created a "crying need" for more IT volunteers. "In this era of budget crunch, the technology coordinator position for schools is in jeopardy," Smith says. Tech Corps estimates that a typical school district has one paid tech coordinator for 750 computers.

Management Training

Geekcorps, which is a division of International Executive Service Corps, a nonprofit development group, has had little problem attracting volunteers, according to Executive Director Ana Maria Harkins. Its database boasts

1,500 willing workers, but Geekcorps sends out only 50 people a year to projects in Bulgaria, Ghana, Mongolia, Rwanda and elsewhere.

Olivia Given was "just a coder" when she took a leave of absence from SeniorBridge Family Companies Inc., an elder care provider in New York, where she would typically "put on a set of headphones and say, 'Don't bother me.'"

But Given's Geekcorps experience in Ghana, where she taught programming and database development techniques to start-up companies, changed her attitude about her career.

Because of the culture and the way business is done in Ghana, "you always have to be friendly.... So I got practice with social interaction and networking," Given says.

"When I came back, I felt lonely with my music and my computer screen," she says. "Now I'm able to add the interpersonal component to my job." As a result, she says, "I went from 100% coding to about one-third management consultant at my company."

Matthew Blakely says the soft skills he picked up while developing a document management system in Ghana were considered valuable when he interviewed for his current job as a financial analyst at Gateway Inc. in Poway, Calif.

"During the interview, it was a great thing to have on my résumé," he recalls. "People saw my experience there as proof of resourcefulness and teamwork."

Robert Mork, a technology recruiter at Mason Concepts Agency in Los Angeles, agrees that when choosing between two equally qualified candidates, volunteer experience would be considered a plus, because "the work would be seen as generous and wellmeaning."

"On the other hand," he says, "if it was mundane technically, it could be a negative."

Avoiding mundane work is what prompted Ken Matusow to volunteer for Geekcorps' business development efforts in Bulgaria. "Silicon Valley is dormant right now," observes Matusow, CEO of Synergicity Inc., a consultancy in Moss Beach, Calif. "Talented people are not working; they're looking around for 'the next big thing.'"

However, he says that "the next big thing may lay in geography, not technology." Matusow says that if Silicon Valley is going to grow at its historically fast pace, it needs to create demand for its products in new, expanding markets overseas. And Geekcorps, he says, can be a catalyst to help companies abroad grow into Silicon Valley customers.

VOLUNTEER STATS Demographics One-third are in the 21-35 age group One-third are 35-55 One-third are 55 or older

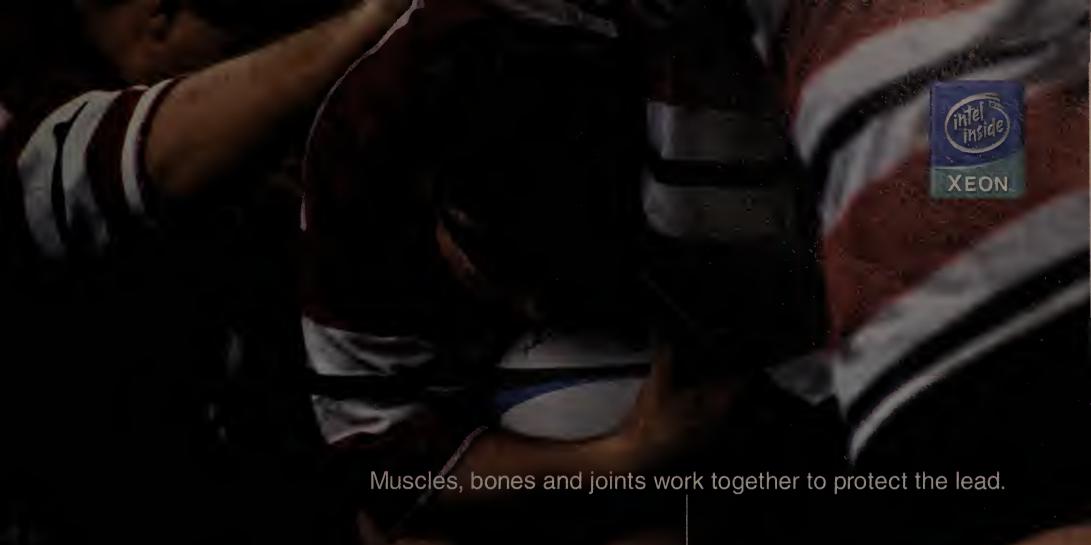
■ 70% don't have school-age children

- Average Time Commitment
- Four hours per month (Tech Corps)
- Three to four months (Geekcorps)

SOURCES. TECH CDRPS, MAYNARD, MASS AND GEEKCDRPS, NDRTH ADAMS, MASS.



Members of Geekcorps travel to underdeveloped countries such as Ghana and provide IT assistance to start-up companies there. Pictured from left to right are Ethan Zuckerman, founder of Geekcorps; Ana Maria Harkins, executive director; Stephanie Lindenbaum, recruitment coordinator; and Neil Bibbins, program development coordinator.



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BRIEFS

Tasty Baking Names Its First CIO



Autumn Bayles, 32, has joined Tasty Baking Co. as CIO. It's a new position at the Philadelphia-based company, which has annual sales of \$255 million.

Bayles will oversee all IT operations and help integrate state-of-the-art technology as the company executes its business transformation plan and expands the distribution of its snack products. Bayles has worked in various consultancy roles at IBM Business Consulting Services, venture capital firm Safeguard Scientifics Inc. and Destiny WebSolutions Inc.

Perot Wins Hospital Outsourcing Deal

Perot Systems Corp. in Plano,
Texas, and Parkland Health & Hospital System in Dallas have signed a
five-year, \$140 million IT outsourcing contract. The deal is the third
phase in Parkland's Enterprise
Transformation effort to implement
new technology to better manage
patient data and complex hospital
processes. About 200 Parkland
workers will move to Perot as part
of the full-service IT deal.

Study: BPM Booming

According to a Meta Group Inc. study of 459 companies last month, 85% of respondents expect to start business performance management (BPM) projects within 18 months:

- Many will begin by replacing Microsoft Excel for financial planning, the most commonly used BPM tool.
- Companies with more than \$1 billion in revenue said they plan to implement corporatewide integration, linking all operational areas such as CRM and human resources.

Meta attributes these investment plans to better IT budgets, as well as companies' efforts to gain more business value from analysis and business intelligence systems and reduce the number of reporting tools. NORBERT J. KUBILUS - PEER TO PEERS

Mergers: IT Disaster Or IT Opportunity?

T HAS BEEN nearly 15 years since the American Management Association first surveyed the impact of mergers and acquisitions on IT organizations. That report revealed that IT was the least studied of all corporate functions in premerger discussions. It also said that IT consolidation had the lowest priority in postmerger activities.

Unfortunately, that situation hasn't changed.

Mergers or acquisitions affect thousands of companies every year, but CIOs find themselves excluded routinely from premerger planning. Corporate executives and M&A consultants tend to underestimate the effort required to achieve IT consolidation. IT organizations remain unprepared for consolidations.

Whether or not IT management is ready for a merger or acquisition, the CIO of the combined organization must deal with two or more IT departments that are in a state of transition. Premerger systems for the companies must be maintained and operated; users must continue to receive the same level of service as before the merger or acquisition. At the same time, many, if not all, of the major applications must be consolidated within a six- to 18-month window.

Managing a transition involves integrating staffs and systems to form a new IT organization and infrastructure. The first steps are to name an IT transition project manager and to charter a transition management team that addresses capacity, budgets, system and network compatibility, staffing, access and security, user service levels, and the risks associated with the IT consolidation. The management team develops a detailed IT transition involves interesting the staff of the staff



sition plan, defines a transition management structure and secures the staff, expertise, technology and funding necessary to handle the transition.

The application portfolios of both companies serve as the starting point for determining which systems best satisfy postmerger business requirements. Systems incompatibility is the source of many problems, especially with

systems that support corporate functions such as finance, human resources, purchasing, sales and distribution. Even where both premerger entities employ the same ERP or CRM systems, differences in business processes and rules, as well as systems customizations and release variance, can preclude a simple conversion of one company's operations to the other's systems.

Instant consolidation of all IT systems or operations is neither necessary nor desirable. The key is to establish transition priorities. One workable scheme gives the highest priority to systems and operations that must be merged or consolidated because of business or regulatory requirements, followed by those where consolidation is desirable but not necessary within the first 12 months. The next priority is for systems and operations that can remain unchanged because consolida-

tion isn't warranted or there's no counterpart in one of the premerger organizations. Lowest priority goes to systems or operations that should be replaced or eliminated.

Maintaining user support is a priority unto itself. The transition management team should negotiate a service agreement with each business unit that specifies the level of development, maintenance and operational support that the unit requires. It should also address the systems capacity and availability that IT will deliver to the business unit.

Organizational and cultural issues are often the hardest to address because change breeds anxiety. Downsizing is an inevitable M&A result, and IT isn't the only area affected by staff reductions. Lack of communication is the main cause of IT personnel problems within one year after a merger or acquisition, and explaining changes to IT staff can be a complicated process due to many initial unknowns.

CIOs of successful consolidations rely on a series of messages to inform managers and staff of developments. Each note is simple and informal, uses an objective and optimistic tone, and provides only relevant details. The CIO has to look to the human resources department as a partner to help deal with downsizing.

The IT organization in a typical company is more likely to face M&A activity than almost any other catastrophic event. Understanding what needs to be done, evaluating risks and opportunities, and planning and executing efficiently are essential. Effective IT transition management can ensure successful alignment with M&A objectives.

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Advertising Supplement

IT Careers in Healthcare

If ever there was an equation for opportunity, information technology in healthcare is it. It's the nation's biggest economic sector with \$1.1 trillion in annual expenditures. Investment in healthcare IT over the next four years of \$18 billion is estimated to create savings greater than \$120 billion, according to Mark Uncapher, senior vice president and counsel for the Information Technology Association of America (ITAA).

The problem is how to fund the investment. "We're talking about an industry where you still get a handwritten receipt in most doctors' offices," Uncapher says. A driving force is needed, say the change leaders, to move healthcare from the manila patient folders lining office walls to the use of technology to improve patient relations, payments, clinical care and research.

Jennifer Covich of the eHealth Initiative, a collaboration of healthcare companies and IT experts, says federal law is mandating part of the change. The Health Information Privacy and Protection Act forced changes on the administrative side. Now the Medicare Reform bills in both the House and the Senate target investment in chronic care technologies, offering reimbursement for handheld devices for use by patients. But who pays? Lawmakers are considering options ranging from grant funding to rolling loan processes. The outcome of the U.S. Senate and House negotiations will, in large part, dictate how rapidly IT spreads throughout the healthcare industry and how many people will be needed to staff the changes.

John Glaser, chief information officer for Partners HealthCare in Boston, says for organizations such as his, which are developing and implementing technology rapidly, the staffing requirements are broad and deep. His group has more than 1,000 employees with a projection for 7% growth in 2004. His \$120 million budget is augmented by an annual capital investment of \$40 million. "Some of our staffing is for the upkeep of the system – combating viruses, managing data center, network engineering – the basic infrastructure," says Glaser. "On the application side, we run basic administrative systems ranging from purchasing to scheduling to generation of claims."

The third IT component within healthcare delivery is actual care. From access to MRI images to medical orders and notes, the system includes a range of capabilities.

Smart systems – known as medical expert systems – assist in rapid, quality decision-making by the staff. "We'll see more innovation in the expert systems and telemedicine" which will bring specific medical expertise to any location, predicts Glaser. As an example, the mammogram of the future will not only capture the image, it will also detect.

The IT professionals seeking work in the healthcare industry can do so in several ways. There is demand for software development and architecture expertise. "We need network engineers and people who are good at diagnosing problems. We also need developers who are expert at eliciting needs from the users and who have that burst of insight that will result in technology advancement," Glaser says.

The deeper into delivery of care and research the IT professional goes, the more necessary the medical and science knowledge. This may mean an IT professional seeking additional education in life sciences. Or it may mean a healthcare professional who is engrossed with using technology to propel care to new and better levels. For Partners, Glaser has gained that expertise in four departments by hiring physicians who steered toward technology as a second career. Nurses head two of Partners' 20 departments.

While industry-wide investment in IT is a miserly 2 - 3%, compared to 7-12% in other industries, Glaser says the pressure is on for increased IT use. He points to pressures on cost and a spiraling increase in volume in terms of patients served. "We have to be able to serve patients faster and improve their care while helping our limited staff avoid burn out."

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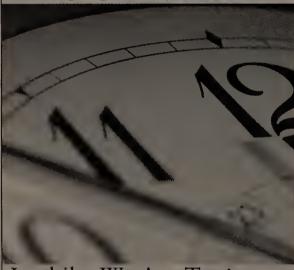
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SENIOR APPLICATIONS DEV-ELOPER (SAPTM ENHANCE-MENTS) A global, Boston-area company engaged in the design, manufacture and sale of con-sumer products, has a immedi-ate need for a highly skilled Senior Applications Developer (SAP Enhancements). This senior-level SAP technical spe-cialist position involves the analysis, design, development, testing and support of highly testing and support of highly complex/customized add-on's to SAP's Advanced Planner and Optimizer ("APO") and R/3 systems under UNIX. Additional tems under UNIX. Additional responsibilities include techical mentoring of less-experienced SAP staff and some administrative duties. The position is also responsible for 24/7 on-call availability one week per month. Minimum educational requirements include a Bachelor's degree (or equivalent) in MIS, Computer Science, Math, Computer Engineering, or similarly relevant field. Minimum experience required is at least Computer Engineering, or similarly relevant field. Minimum experience required is at least five (5) years SAP R/3 application development, at least one (1) year of which specifically involved custom enhancement of SAP's Supply Network Planning ("SNP") module. Specific requirements include the demonstrated ability to develop and support SAP interfaces using RealTech's Interface Management 3 ("IM/3") tool. Also required is the demonstrated ability to independently monitor and fix batch-cycle problems in an SAP/UNIX/Autosys jobscheduling environment. Additionally required is the demonstrated ability to create and enhance complex "user exits" in SAP's SD, FI, and SNP modules. Finally required is the demonstrated ability to develop and maintain complex UNIX shell scripts. Base salary is \$96,444 per year. Benefits, include ten days paid vacation, contributory medical, dental, disability, life insurance, and other industry-competitive benefits. Qualified applicants respond with two (2) copies of resume only to: Case# 200203084, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114. An EOE/MFHV.

Ref. # AM001. B/z Consultant for Atlanta, GA to articulate vision, design b/z sols. using OR/modeling through client interaction, comm. / training & gathering/validation of reqs. Conduct b/z gap analysis, analyze reqs.; write reqs. docs; handle b/z strategy, change mgmt., org. design. Perform audits, math models & algorithms, model using SAS, CART, Advanced Excel, and Stat-Graphics. Implement math/stat. based mkt. response & models to optimize pricing, revenue & profit growth. Solution testing & Report of b/z & model results. Comp. Salary. MS/MBA in OR/equivalent + 2 yr. exp., in job duties. For consideration, apply with ref. # to: HR, Manugistics, 9715 Key West Avenue, Rockville, MD 20850 with proof of work authorization.

Software Engineer for telecom s/ware co in Rochelle Park, NJ. Reqs: Bach's in Comp Eng or Electronic Eng & 3 yrs exp in telecomm s/ware eng. Send resume to: Schema Jobs, 365 W. Passaic St, Rochelle Park, NJ 07662, attn: HR

Computer - Consultant, Application Development/Data Warehousing. Burlington, Massachusetts and various client sites throughout the United States where assigned by head office management on a project basis. Perform application development, full life cycle implementation and assessment of Data Warehousing operating systems. Responsible for analyzing, designing and testing systems. Responsible for all a lyzing, designing and testing systems and softwares using Oracle, PL/SQL, Erwin and Bric Reporting Tools for a diverse client base. Provide business integration support, busines process transformation an process transformation and change integration. Perform network architecture reviews. Modify software per client needs and specifications. Provide client training and support. Individual consulting assignments will entail placement on projects throughout the United ments will entail placement on projects throughout the United States from three months up to three years duration. Requires Master's Degree or equivalent in Computer Science or Mechanical Engineering, equivalent means a foreign degree determined by a recognized credential evaluation service to be equivalent to a master's degree dential evaluation service to be equivalent to a master's degree from an accredited U.S. college/university, and one (1) year experience in the job offered or (1) one year of experience in the related occupation of Information Technology Consultant, Software Engineer or Programmer/Analyst. Must have previous Data Warehousing experience. Must have previous experience developing Data ence. Must have previous experience developing Data Warehousing systems. Must have previous experience working with a major international consulting firm. \$92,832.20 per year. 40 hours per week 9:00am-5:30pm. Must have proof of legal authority to work permanently in the U.S. Send cover letter and resume in duplicate to Case #200201486, Labor Exchange Office 19 Staniford St., 1st Floor, Boston, MA 02114.

Full-time Data Warehouse Architect. Architect, design, develop and implement multidimensional databases, using ETL procedures in a SQL Server 7.0/2000 environment, for data modeling analysis, ODS, data marts, data warehouse architecture, database design, documentation, optimization, implementation and maintenance in an SQL server environment, MicroStrategy 7 Application, MicroStrategy Project and responsible for integration of multiple databases and multiple source systems, SQL Server 7.0/2000, OLAP applications, DTS Package VB, ASP, C++, Lawson Financials, and Multidimensional tools. Must have Bachelor's degree in Computer Science, Mechanical Engineering, or related field. Must have 3 years experience in job offered or position with same duties. Salary competitive. Send resume to: Michelle Kossack, CareerBuilder, LLC, 8420 West Bryn Mawr Avenue. Suite 900, Chicago, Illinois 60631.

SOFTWARE ENGINEER to develop RT remote control systems using embedded development environment, uC/OS RTOS, assembly, C#/ASP, Cellemetry/GSM and wireless security technologies; design and implement firmware to control Cellemetry/GSM Radio, RF/PLC transceiver through Motorola's HSC12 serial microcontroller; design and verify web-based remote management system on ASP.NET. Require: Master's degree in Electrical Eng. /Computer Sci. and two years of experience. Competitive salary and benefits. Mail resume to: HR Dept., AMBS LLC, 102A Wynn Dr., Huntsville, AL 35805.

Principal Software Engineer.
Responsible for developing an IP Service Control System. Will use Fastpath flow-based architecture. Will work on developing an embedded Peer-to-Peer (P2P) traffic detection and control system using P2P protocols and client applications, as well as traffic generation/performance tools such as IXIA, SmartBits and packet analysis tools like Sniffer-Pro, Ethereal. Will also develop security features to secure the switch against DoS attacks, IP address/Port spoffing, ICMP attacks, etc. Will be completely responsible for developing and enhancing OP related protocols like OSPF, VRRP, Multicast, BGP, NAT, SNMP. May work with several operating systems including, but not limited to, VxWorks, pSOS, and Linux. Requirementis: Master's degree EE/Communications plus 2 years of experience in the job offered or in the related occupation of software development in OP Protocol stacks/implementing flow based service systems. Will accept a Bachelor's degree and 5 years of progressively responsible experience in lieu of a Master's degree and two years of experience. Experience must include IP Protocois such as OSPF, BGP, VRRP, IGMP, RIP, PEER to PEER traffic management; Ethereal or SnifferPro; Secunity for routers and switches; tools such as IXIA/SmartBits. Salary: \$90,000.00 Hours: 8:00 AM to 5:00 PM. Send duplicate resumes to Job Order #2003-480, P.O. Box 989, Concord, NH 03302-0989

Network Specialist III for Miamito perform complex configuration and maintenance of multiprotocol enterprise network equipment supporting University Data network (LAN/MAN/ WAN/ Wireless) and Optical Network (CWDM/DWDM), utilizing test equipment and network management tools in the analysis and correction of technical problems for data and optical communications equipment. F/T M-Ppays market level salary. Requirements: Bachelor degree in Comp. Science + 2 yrs. rel. experience in provisioning, commissioning and testing UPSR and BLSR systems for Long Haul, Metro, SONET/SDH, POS and Optical Ethernet equipment, inter-operability of multi-vendor optical equipment, TCP/IP, configuring and troubleshooting Gigabit Ethernet routers and switches, management of PBX equipment for voice. Working knowledge of TDMA/CDMA/GSM Wireless network performance including RF engineering, developing software for network design and implementation, network management using SNMP, TL1, custom applications and web servers in UNIX and Windows. Must be proficient in C/C++, Java, ASP.NET and VIsual Basic. Send resumes only to: Priscilla Cleveland, University of Miami, P.O. Box 248011, Coral Gables, FL 33124-4220.

Software Engineers to analyze, design business appls for SAP R/3 using ABAP,BAPI, Workflow, ALE, etc. under Windows and UNIX OS; analyze business processes to determine reqs and generate reports; prepare documentation,flow charts and programming specifications; create application prototypes for client approval and rapid application development; train users inbusiness application usage. Require: MS or foreign equiv. in CS/Engg. (any branch)/Math and 1 yr exp in IT. High salary, F/T position. Travel Required, Resume to HR, Smartsoft International, Inc., 4898, South Old Peachtree Rd, Norcross, GA 30071



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Programmer Analyst (2 pos) req by Soft Dev. & Consult Co: Bachelors degree or its equivl & 2 yrs exp. req. Analyze, develop, test, or maintain projects using tech nologies such as Java, JDK 1.1, Weblogic, Visual Basic, Oracle, PLSQL, C, C++, XML HTML on Unix and NT. Equivi can be based on educ. & exp. Travel to client sites any where in US required. Send res. to Top Source Intl. 2101-A Tatnall St., Wilmington, DE 19802.

FutureTech Consultants, LLC a Future Tech Consultants, LLC a Soware consulting company seeks to fill the following openngs in OakBrook, IL. Technology Mgmt Consultant (Masters in IS Mgmt + 7yrs of IT exp proven exp in managing Consulting Services practice. Need frequent Intl. travel), IT Mgmt Consultant (BS in ECE + 3 yrs of IT exp & proven exp in Mgmt Consultant (BS in ECE + 8 yrs of IT exp & proven exp in Corporate-wide technology implementations. Need PMP, Six Sigma & COBIT implementation exp and frequent Intl. travel). Apply to FutureTech Consultants LLC, 1415 West 22nd Street, Tower Floor, Oak Brook, IL60523

Internet Developer. Develop s/ware apps for internetbased projects using various tools. Masters degree (or equiv) in CS, or similar field, req'd. In lieu of masters, wit accept bachelor level degree (or equiv) plus 5 years of progressive exp in a s/ware development or systems ana lyst position. Competitive salary. Contact: Aimee Hill, Job No. 2416.05, Irwin Mortgage Corp, PO Box 6107, Indianapolis, IN 46206-

SR. SOFTWARE CON-SULTANT ENGINEER sought by IT Co. in Houston, TX. Must have degree in Comp. Sc, plus exp. Respond by resume only to: Mr. Nick Eronko, K/E #10. iPath Solutions, Inc. 2401 #280. Portsmouth, Houston, TX 77098.

NETWORK MANAGER (Jersey City, NJ) Monitor data communications network to ensure that City, NJ) Monitor data communications network to ensure that network is available to all systems of the control tems users and resolve decommunication problem tems users and resolve data communication problems; receive telephone calls from user with data communication problems, such as failure of data to be transmitted to another location; explain user procedures necessary to transmit data; monitors modems and display screens of terminal to mainframe computer to detect error messages that signal malfunction in communications software or hardware; enter diagnostic tion in communications software or hardware; enter diagnostic commands into computer to determine nature of problem; and read code to diagnose problem. Require: Bach. degree in Computer Science, or a closely related field, with 2 yrs. of exp. in the job offered or as a Systems related field, with 2 yrs. of exp. in the job offered or as a Systems Engineer. Prior experience must include 2 years in UNIX, Network Design and Support. Comp. salary and benefits. 8a-5p, M-F. Send resume to: SD-HR, CheckFree Services Corp., 4411 E. Jones Bridge Rd., Norcross, GA 30092; (No Phone Calls Please)

Senior Java Developer, Boston, MA, Evergreen Investments, a div. of Wachovia Corp. Interpret business reqs. & recommend business reqs. & recommend tech. alternatives, solutions, tools, and platforms. Reqs. BA in Computer Science, Eng. or a rel. disc. & 4 yrs exp. in pos. offered or as a Sr. Analyst Developer, Sr. Analyst Programmer, or Web Developer. Programmer, or Web Developer. The 4 yrs reqd. exp. must incl. work w/ relational databases, Java, JSP, Windows, HTML and CSS. 3 yrs of reqd. exp. must incl. work w/ J2EE design patterns and DHTML. 2 yrs of reqd exp. must incl. work w/ WebLogic, EJB, Servlets, XML, XSL, UNIX, modeling tools, UML, Oracle and JDBC. Must be a Sun Certified Java Developer. M-F, 40hrs/wk, Send resume and cover letter to Geri Henderson, Wachovia Corp., 401 S. Tryon Street, 15th Floor, Charlotte, NC 28288-0475. No phone calls. phone calls

Excellent Opportunities!

owa based IT firm has multip openings for comp: S/W Engrs; programmer analysts, systems analyst, network engineers & IT consultants. Need Bach + 1 yr exp for jr IvI posi's & Mast + 2 yrs of exp, or Bach + 5 yrs exp for sr

Skills reqd: Java, Cobol, Magnax, DB2, VB, ASP, Oracle, PL/SQL server, Win NT, Unix, C, C++, VSAM, CICS, Seer Hps & testing. Top \$. May require travel to client sites. Mail resume to:

5807 Fleur Drive, Suite # 4 Des Moines. IA 50321

Zee TV USA, an Indian Language Cable TV Co. seeks Business/Database Prgmr Analysts for its Cheyenne, WY Uplink Facility. BS + 2 yrs exp Respond by resume to HR, ZEE TV USA, 1615 W. Abram, #200C, Arlington, TX 76013.

Infodat International, Inc., has several openings for Programmer Analyst, Systems Analyst, Software Engineer, System Administrator, Database Administrator for locs in WI, TX & nationwide w/exp. in any of the following skills: D/base Admin: Oracle, Sybase, SQL Server, Informix, DB2 Systems Admin: UNIX (SUN, HP-UX, DEC (Compaq), Alpha, Linux, Win 95/98/NT, MVS Prgmr Analysts/Systems Analyst/S/ware Engrs: VB, Visual C++, C, C++, HTML, TCP/IP, UDP/IP, Dsgmr 2000, Dracle Forms 3.0/4.5/5.0, Pro*C, SQL*Plus, Oracle Reports 3.0, PL/SQL, SQL Loader, MQ Series, ASP, Power Builder, Erwin, BPWIN, TOAD, Oracle Fin'l (AP/AR, GL, PO, Order Mgmt, Invenlory, AOL, Alerts & Sysadmin), Oracle, Sybase, SQL Server, MS Access, CRM, Siebel, Actuate, SAP, Peoplsoft, Cognos, E-Commerce, Java, J2EE, Lotusnotes, CORBA, ETL.

ETL.
Req: Some pos req bach w/at least 2 yrs exp, others Masters or equiv w/1yr exp. For some pos 4 yrs exp is accepted. Only those eligible for permanent pos need apply. Must be willing to relocate, if necessary. Salary will depends on exp. Please send your resumes to INFODAT Int'l inc., 421 Pearl Lane, Suite S-101, Fan-Du-Lac, WI 54935. Fax #713-785-2591.

Health System Software Engineer to conduct biological software engineering and bio-logical data analysis for the Vanderbilt Ingram Cancer Center Clinical, Pathology, and Molecular Informatics Core. Duties include creating data base for medical (clinical) and biological data including gene expression, tissue microarray, proteomics, and clinical data; developing web based molecu-lar database software to provide interface to retrieve or upload data and analyzing scientific data. Requirements: Master's degree in Computer Science or related field with strong back-ground in Biological or Chemical sciences and experience with federal regulations for electronic handling of clinical data Experience in a biological or chemical research environment and experience in parallel com puting is preferred. Knowledge of C, R, Perl, Java, XML, and Oracle is required. Please sen resumes to Mary Edgerton, 689 Preston Building, Vanderbil University, Pierce & 22nd Ave

NC Eye Care center seeks DBA/Programmer I to assist w/design, development, opera-tion, maintenance of database systems utilized by org.; provide tion, maintenance of database systems utilized by org.; provide technical direction, recommendation & advice to users concerning database adminisiration under mangr's direct supervision; assist w/network administration, security, enforcement of company wide policies, procedures for data entry, systems integration/automation of reports evaluation of new features of systems for development feasibility. Min. req: Bachelor's in Electronics Engineering/Comp. Science or equivalent & 3 mos in job/job related exp. including C/C++, Visual C++, Visual Basic, Sun Solaris Script, DOS Batch files, Oracle Forms/Reports, PowerBuilder, SQL*Plus, PL/SQL, Access VBA, Excel Macro, Oracle DB, Progress DB, MSSOL, Windows (95/98/NT/2000/XP). SunOS, Solaris, SCO UNIX, ClearCase, TCP/IP, Dalabase Administration (OBA). UNIX Adminis-COPIR, Clearcase, CCVIP, Dalabase Administration (DBA), UNIX Administration, Software Configuration Management, Project Lead. Resumes to Jose Natal, 2325 Gunset Ave., Rocky Mount, NC 17804. No calls. EOE

WORLD CLASS SPECIALTY COATINGS COMPANY IS IN SEARCH OF HIGHLY MOTIVATED, PROFES-SIONAL, AND ENTHUSIASTIC TEAM MEMBER TO JOIN US IN OUR INFORMATION TECHNOLOGY **DEPARTMENT AS DIRECTOR OF DEPARTMENT**

Candidate will directly manage department of 6 team members and be responsible for the development and support of the company's management information systems. Responsibilities include budgeting, strategic and annual planning, business process and database system strategies. The candidate will be responsible for continuous improvement programs, hiring and overseeing the implementation of all business systems. This position requires close coordination with all functional areas within the organization, including sales, manufacturing, warehouse, shipping, and administrative departments. The candidate must have strong inter-personal skills, be self-motivated, and possesses organizational skills. This position requires, at a minimum, a Master's degree in Business Administration, Information Technology, or a related field plus three (3) years of experience in information technology management OR a Bachelor's degree in Business Administration, Information Technology, or a related field plus five (5) years of post-baccalaureate progressive experience in information technology management.

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RPM Wood Finishes Group Attn: Resum P.O. Box 22000 Hickory NC 22603 E-mail: resumes@rpmwfg. Com

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SOFTWARE ENGINEERS: to SOFTWARE ENGINEERS: to research, design, develop computer software systems and lead new product development projects to timely completion. Ability to evaluate and design SAP software is required. Needs a Masters in CS/MIS or any related degree combined with 1 + years experience or Bachelors with 5 years experience in designing and developing computer software systems.

SYSTEMS ANALYSTS: to ana lyze, design and develop opera-tional procedures to automate tional procedures to automate processing and to develop new systems to improve production. Knowledge of SAP, Oracle, and other business related software is essential. Needs Bachelors in Engineering/CS or in any related field combined with 5 years relevant experience in designing and developing computer software systems.

Please send resumes to Advent Global Solutions, Inc., Human Resources, 3419 N. Kennicott Avenue, Suite C, Arlington Heights, IL 60004.

Software Engineer - Research, design, develop, and implement large-scale s/w systems for clients, including web-based systems: analyze s/w requirement, design s/w applications, integrate different systems, port server data from one platform to another, assure the quality of system operations & provide user support. Use C/C++, Java Script, HTML, SQL, AIX, HP-UX, Solaris, Windows NT, Netware, and Vignette StoryServer. Min Req: BA in Computer Science or Computer Engineering & 2 yrs exp in the job offered. \$71,392.50/yr, 40 hrs/wk, 9a-6p. M-F. Must have work authorization. Will work at various unanticipated locations throughout the US. Apply by resume only to Workforce Development Programs, PO Box 46547, Denver, CO 80202. Refer to order # CO 5056284.

Job Code CSA. Analyst to design, develop and debug intra/internet & end-user appls. by evaluating customer reqs., defining prog. objectives, crealing solid design arch./ code. Develop std. / templates for dev., maint. & usability tasks. Define sys. reqmts. & obtain feedback to improve usability. Analyze applcn./design. needs based on customer reqs., budget & priorities. Provide content support. Must be familiar with §508 accessibility reqs.; coding exp. in HTML, ASP, SQL, VB, VBScript, JavaScript, MS Access. BS in Science or Eng. or equiv. + 1 yr exp. in job duties.

Job Code CP. Programmer of web apps. in HTML, VBScript, VB, ASP, ADO, COM/DCOM, IIS 4.5/5.0, Visual Interdev, Javascript. Develop SQL Server databases, stored procs., views, triggers, and functions in SQL 7.0 & 2000. Test pages, monitor performance & refine utilities; gather requirements and perform systems analysis. Lead or assist in design work; develop use cases, process flow, etc. Train jr. programmers; perform code review. Req. BS in Science or Eng. or Equiv. * 2 yr exp. in job duties.

All positions offer comp. salary Apply with Job Code: BCA, 2180 Satellite Blvd., #325, Duluth, GA

Programmer Analyst. Analyze, review and alter programs to increase operating efficiency or adapt to new requirements. Build business applications including user interface, data modeling and management, and back-end systems. Formulate plan to develop programs using object-oriented analysis and design. Interact w/ business analysts and internal/external clients to determine plans and priorities. Must have Bachelor's in Computer Science, Engineening or related, and knowledge of Java Socket API, Java RMI, ANSI SQL, Oracle PL/SQL, XML/XSL, OOD, and OOP Send resume to APAC Customer Services, Inc., Attn: Cindy Corkery, 6 Parkway North Center, Deerfield, IL 60015. Center, Deerfield, IL 60015 EOE/AA APAC CUSTOMER SERVICES Inc. is not affiliated with APAC Inc., the road paving and con-struction malenals company

SYSTEMS ANALYSTS needed

for analysis, coding, implementation & testing of mainframe applications using COBOL, CICS, IMS & DB2. Develop data models & interfaces for data migration from IMS to DB2. Create test plans for unit testing, integration testing, systems testing & user acceptance. Program mainframe data connectivity to web based servers using the Java 2 Platform (J2EE), the Oracle Web Server & IBM's Web-Sphere application server. Bachelors required in Math, Computers, Engineering or any other related field of study plus two years of experience in the job duties described above. Must have proof of legal authority to work in U.S. Salary: \$70,000.00/year for a 40 hour work week. Interested applicants contact the Site Administrator, Pittsburgh/Allegheny
County Career Link, Attn: CL Program Supervisor 425 Sixth Avenue, Ste. 2200 Pittsburgh, PA 15219-1837. Refer to Job Order #WEB 354790. Ad paid by An Equal Opportunity Employer.

Engineer
Pitney Bowes Inc. has multiple openings in its Shelton, Connecticut office for Engineers

Responsible for global rate engine development to support Company product. Provide use case and rating unit tests to support a dynamic rate engine soft ware development environment

Aust possess at least a bac lor's degree in Computer Science, Electrical Engineering or a related field and relevant work experience as a Software Developer. Programmer, including experience with full phases of engineering work, including programming experience with C/C++ language development on an embedded system.

Resume and/or cover letter must reflect each requirement above and specify reference code E/R/V or it will be rejected

Forward resume to Robbin Drev Elliott, Pitney Bowes Inc., One Elmcroft Road, Stamford, CT

SOFTWARE ENGINEER to design, develop, test, implement and maintain computer software systems and ERP applications using ASP, Java, Servlets, JSP, XML, Oracle and Visual Basic under Windows 2000 operating system. Require: M.S. degree in Computer Science/Engineering. or a closely related field with two years of experience in the job offered. Extensive travel on assignments to various client sites within the U.S. is required. Competitive satary offered. Apply by resume to: Krishna M. Pottabatula, Workflow Technologies, Inc., 113 Barksdale Professional Center, Newark, DE 19711, Attn: Job VG.

Applications Software Develop-ment Engineers needed for Computer & Engineering Consulting company. Duties include: Utilize Adaptive Finite Element Methods to perform Element Methods to perform CAE simulations. Prototype, develop, implement, and document an a-posterior error estimator and an adaptive procedure using a-posterior estimator for thermally coupled, incompressible Navier-Stokes flow problems. Perform underhood/powertrain cooling, thermal management, and external aerodynamics utilizing parametric solid modeling with Pro/E MCAD software from PTC; anistoptropic automatic mesh generation using proprietary anistoptropic automatic mesr generation using proprietary MeshSim; CFD model specifica-tion using proprietary SpecSim CFD analysis using AcuSolve from Acusim; Post-processing or from Acusim; Post-processing of simulation results using Fieldview from Intelligent Light; application of adaptive procedure developed using the a-posterior error estimator. Preparation and representation of simulation results. Position requires a Ph.D. in Applied Mathematics or Software Engineering plus two years of experience in the job offered or two years of experience as an FEA Engineer or in FEA Research, to include experience in Adaptive Finite Element Methods and a-postenior error estimation. Experience may be obtained as part of academic training or subsequent to it. Hours are 8:00 am. to 5:00 p.m.; 40 per week. Salary is \$73,724.56 per year. 40 per week. Salary is \$73,724.56 per year. Please submit resume to P.O. Box 11170, Detroit, MI, 48202. Reference No. 211554.

J.D. Edwards is a one billion dollar global software company that is enabling collaborative commerce in the connected economy. We currently have openings in a number of areas, at all levels, including: software developer, business software developer, programmer/analyst, internet programmer, software quality assurance engineer, business software quality software engineer, technical consultant, web developer, database administrator, technical specialist, applications consultant, and other IT positions. Positions are available at our world headquarters in Denver and at other locations throughout the United States including San Francisco, Costa Mesa, California, Chicago, Texas, New Jersey, Boston, Charlotte, N.C., etc. Please visit our website for a complete listing of available job openings, locations and other information: www.jdedwards.com. J.D. Edwards is an equal opportunity employer.

Looking for a candidate with overall experience of 9+ years with atleast 6+ in web technologies, the applicant should be very good in analysis, design, development, testing and maintenance of web applications using JAVA, EJB, Servlets, XML, JSP, HTML, Javascript, XSL, XSLT, Visual age, Secure, CRT, TOAD, Websphere, DB2, MS Access, Informix, PVCS, ERwin, Unix Shell scripts, Sun Solaris, Windows NT, Mercury load runner 7.51, RAD View Weblod, TogetherJ, JProbe, Design patterns, Frame work, Data Modeling and Rational Rose, Knowledge of C, COBOL, Visual basic and Fortran, SEI CMM Quality process and Proudction support on 24/7 basis is essential. CRON jobs, iPlanet, LDAP, weblogic 5.1, Oracle 8i must have been used recently into Automobile/financial industry. 40hr/wk, Resumes should be sent to 226 Paul St.#204, Pittsburgh, PA - 15211.Job Order# 343657

Concept Development and Secure letworking Engineer

Pitney Bowes Inc. has an opening in its Shelton, Connecticut office for a Concept Development and Secure Networking Engineer.

Responsible for concept develop-ment through customer centered innovation and research into the application of secure wireless net-working technology to an office en-vironment with a focus on both wired and wireless networking pro-tocols

Must possess at least a bachelor's or its equivalent in Computer En gineering or a related field, class room training or experience with a focus on both wired and wireless in the protection in the protection of focus on both wired and wireless networking protocols, including TCP/IP, SONET, ATM, and wireless protocols, including IEEE 802.11 and Bluetooth, C++ development and data structure design, training in technical writing and public speaking presenting technical material, training in accounting and economics to support business modeling and concept evaluation, and design and analysis of wireless network security, including participant authentication, end to end channel security, and location management in both ad-hoc and managed environments.

Resume and/or cover letter must reflect each requirement above and specify reference code CDSNE or it will be rejected.

Forward resume to Robbin Drew Elliott, Pitney Bowes Inc., One Elmcroft Road, Stamford, CT 16926-0700.

Sr. Systems Analyst. Analyze user reqts, procedures, problems to automate processing or improve computer system; Prepare charts and diagrams to detail operations performed by computer programs; Design, analyze, plan develop, implementation, document of applications to convert Orrnet busi system functionality to Intranet/Internet; Design and maintain tem functionality to Intranet/Internet; Design and maintain infrastructure to support applications; Collect, analyze, report statistics re: Ormet Internet usage; Design, develop, maintain, integrate legacy back-office ERP Systems. B. S. in Comp Sc, Elect Eng, or IS + 2 yrs expoin field. Exp. in systems analysis and design; case methodologies; database and multiple platform connectivity; designing, developing, maintaining and integrating legacy back-office ERP Systems such as JBA, and ProfitKey and developing e-ERP Systems such as JBA, and ProfitKey and developing e-commerce appl wi Microsoft. NET, Visual Studio.NET, c#.NET, VB.NET, C++, VC++, AS400, SQL/400, IIS , ASP, HTML DHML, Visio, SQL Server 2000 and Oracle 9i. 40hr/wk. \$64,500/yr. Must have perm work auth to work in U.S. Send resume to: Ms. Nisley, Ormet Primary Aluminum Corp, PO Box 178, State Rte 7, Hannibal, OR 43931.

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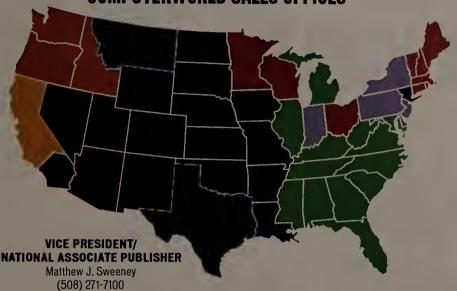
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Sun Pricing

negotiate complex pricing deals based on "fuzzy" variables such as how many processors a product runs on or how many people use it.

"I like it because at least it's straightforward and predictable," said Thomas Insel, a Unix administrator at Gracenote Inc., an Emeryville, Calif., company that licenses media software to consumer electronics makers. He's also interested because the licensing model could give him access to Sun products that he wasn't using before. The company has only 50 employees, so at \$100 per employee, peremployee pricing makes it far more affordable to get Sun's entire middleware lineup, he

Some larger corporations anticipate similar benefits.



The quote of \$1.5 bil-The quote of the lion didn't go down too well, but we'll figure something out.

SUN'S JONATHAN SCHWARTZ, referring to a customer visit to the Indian Ministry of Railways, which has 15 mil-

One large U.S.-based financial services company installed the Java Enterprise System as part of Sun's beta program. With 5,000 employees, it determined that buying Sun's complete package of software would give it access to more Sun products than it had before for the same price, said

the company's senior IT architect, who requested that his name and the name of his company be withheld.

Although Sun maintains that haggling over price isn't an option under the new model, the financial services company still managed to strike a deal. "There's always room for negotiation. If it's not on the software, it's on the services or something else," the archi-

Beaumont Hospital in Dublin also tested the Java Enterprise System, but it doesn't plan on making the move. Much of the server software that the hospital uses is opensource, including the JBoss application server and the Open-LDAP directory server, so it would end up paying more, said Tony Kenny, the hospital's IT project manager.

Beaumont is in the process of switching 12,000 employees to Sun's Java Desktop System

(formerly Mad Hatter), Sun's open-source alternative to Windows and Office that was also announced at the conference last week. The hospital has faced deep funding cuts, and the price of the desktop system — also \$100 per employee per year — made it more attractive than Microsoft Corp.'s software, Kenny said.

Kenny said he's generally pleased with the software so far, although functionality is limited in some areas such as remote desktop management.

Honor System

Sun officials said they adopted the per-employee model because it's simple and can be verified in U.S. regulatory filings, where public companies must disclose their employee counts. Outside the U.S., the company will rely on the honor system, said Sun CEO Scott McNealy. "I'm not really worried about [British Telecommunications] stealing our software," he said dismissively.

Some customers will benefit more than others, Sun acknowledged. Executive Vice President Jonathan Schwartz said his worst customer visit was with the Indian Ministry of Railways, which he said has 15 million employees. "The quote of \$1.5 billion didn't go down too well, but we'll figure something out," he said.

Having a high employee count was enough to make a large U.S. beverage company hesitant. An IT manager who asked that neither he nor his company be identified said the simplicity of the pricing model is very attractive. But his company employs thousands of warehouse workers who don't use any software, he said, "so we'd have to take that into consideration."

Niccolai writes for the IDG News Service.

'It's a No-Brainer,' Says World Book CTO

One of the first users to sign a contract under Sun Microsystems' per-employee pricing model was Chicago-based publishing house World Book Inc. With 300 employees, the company is paying \$30,000 annually for the Java Enterprise System. World Book Chief Technology Officer Tim Hardy spoke last week with Computerworld about why he signed up.

Have you estimated how much you're saving under the per-employee pricing model? It's probably 50% to maybe even 75%. We were a Sun user with a standard perprocessor-type pricing model. But we have such a high proportion of users of our applications that run on Sun as a ratio to employees, the per-processor pricing model is a lot higher. So it was really a no-brainer for us. It also offers up opportunities for us we may or may not have done otherwise, because we're

sticklers about turning a profit. So we wouldn't have done some of these things or bought some of these things if it wasn't a

demonstrable moneymaker.

What things are you doing now that you might not have done before? We haven't implemented anything, but certainly the decision to add portal-type features to our site was made much easier, because it was already a cost savings to purchase the software we already were using in this manner. With Portal Server, we had talked about doing it, so now we'll be able to add some personalization-type functionality to our site, which has

millions of subscribers.

What happens when employees leave or are hired? Ours is a three-year agreement, but the number of employees is updated annually.

Can you see any downsides at all to the per-employee pricing model? We're a small enough organization that fluctuations in the workforce aren't a downside. But it could be for large organizations - your business changes, and you're still paying a higher rate after you've downsized. That could be an issue - it's certainly not for us.

You could also argue that a downside is that it goes against a best-of breed mentality for software. However, the pricing is so attractive that it doesn't necessarily preclude you from taking a component out, not using one

of Sun's components, and using a different vendor for that.

And there's nothing in your agreement with Sun that disallows that? Absolutely not. In fact, one of their selling points is that you can unbundle a component very easily and not use it if you don't want to. For example, it comes with Sun's messaging software. We're not going to use that; we use Exchange.

How does this model fit into your overall purchasing strategy with other vendors? We are moving more toward subscription-based software purchases. We're really getting away from per-processor pricing. That's really important to us, because we want to have a predictable cost structure.

Is the per-employee pricing model something you've talked to other vendors about? No, this was brand-new.

It was like a double take for us. We calculated the numbers and said, 'You're serious, right?

We were one of the first customers to take Sun up on this. It came about because we were exploring options for buying some portal server software. It was proposed to us, and it was like a double take for us. We calculated the numbers and said, 'You're serious, right?" So it was definitely something new to us.

What other vendors were pitching for your business? We were considering IBM's WebSphere and BEA's Web-Logic for their application and portal server solutions. But like I said, it was a no-brainer.

- Don Tennant





FRANK HAYES - FRANKLY SPEAKING

The Human Factor

ONEY. That's what offshore outsourcing is really all about, isn't it? It's cold, hard dollars trampling all over human values. It's coin-operated CEOs slicing away at IT budgets and staffs so they can make their balance sheets look good and preserve their own huge salaries. That's really all that gutting an IT staff and sending the work offshore involves, right?

Wrong. Oh sure, the money matters. But don't kid yourself — there's usually a very human element involved when CEOs take a meat ax to IT. Sometimes they just don't like the IT department. And sometimes that's with very good reason.

Ask end users, managers and executives what they think of their IT departments, and you're likely to get one of three responses. One segment of users, maybe the largest group, is neutral. They don't have strong feelings about IT. Yes, they'll tell you, those people in IT must be doing something, but no one here really knows what it is. Probably writing programs, fixing PCs when they break, that sort of thing.

Then there's another group of users who can't say enough good things about the IT department. These are users who really *like* the IT people. They'll tell you stories about problems solved, projects saved and miracles worked. They may not know what the IT shop actually does either — but they can tell you what IT has done for them.

And then there's the third group of users. They have some choice words to describe IT people too, but *solved* and *saved* and *miracles* aren't part of their vocabulary. *Arrogant* is, though. So are *high-handed* and *inflexible* and *uncooperative*.

Guess which group will be quickest to jump

on the outsourcing and offshoring bandwagon?

The official explanation will always be that it's about money: cost savings from offshoring application development. Increased efficiency from outsourcing operations and the help desk. Happier investors because of the reduced head count.

But if it feels like upper management is sticking it to IT, that just may be what's happening.

And if you can step back from the situation, it's easy to understand. Lots of those business people have

felt like the IT department has been sticking it to them for years. But they were stuck with IT. There was no way to get rid of those arrogant, high-handed blankety-blanks in the IT shop.

Until now, that is.

And now that there's finally a way to do it, they will. Even if it means buying into improbably optimistic estimates of cost savings and unlikely claims of quality and effectiveness from outsourcers. Maybe it's all wishful thinking — but after years of feeling like hostages to the IT shop, what these executives and managers mainly wish is to dump their IT departments.

Is that ugly? Sure. Unfair? Maybe. But if a CEO doesn't value what the IT department does, and non-IT executives and managers down the line don't have anything good to say about IT, maybe that really does define how much value the IT shop has for that business.

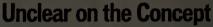
If that's the case with your IT shop, you have a problem — one it may be too late to solve.

Of course, if that's really your situation, you probably still won't believe it. After all, outsourcing is no silver bullet. We're IT. They need

us. They can't just get rid of us — and if they try, they'll regret it.

Perhaps. But consider this: Even if outsourcing turns out to be a horribly wrong decision, it's still a no-lose situation for executives, managers and users who've had it with IT. The old IT department — the one they hated — is gone. If a new IT shop has to be built from scratch, it just might be better this time around.

It's not a calculation that's about counting the money. But it certainly is human. ▶



Divisional IT pilot fish is implementing a new shipping application, and the corporate IT group insists that it should run at headquarters – not at the division. What about support on Sundays? fish asks. "We have a help desk and 24-by-7 pager support," IT operations manager tells him. But the first Sunday that there's a problem, there's no response when support is paged. Monday morning, furious fish demands to know who had the pager. It was sitting on top of the server, admits ops manager. "We didn't figure anyone would call, it being a Sunday and all."

Um . . . No
When user complains that his
name isn't set up
properly in the

properly in the phone system, pilot fish verifies that it is - the name is even spelled correctly. "But my name doesn't show up on my display when the phone rings," user says. "I just keep getting all these other names showing up." That's caller ID, fish explains, so you'll know who's calling you before you pick up the phone. Grumbles user: "But can't I have my name show up on my phone when I pick it up?"

Speed Kills

User complains that the data he's entering into the database is disappearing. Pilot checks, and sure enough, for every new entry the user makes, an old one vanishes. Show me what you're doing, fish says. "Sure," says user; he pulls up an existing record, selects "edit" and starts entering a new customer's information. Why are you editing instead of adding a new record? asks perplexed pilot fish. "Oh, I used to," says user, "but this way is much faster."

The Perfect Spot Chief security officer shows IT pi of fish the

new batteryless flashlights he's bought for the
data center. Shaking
each of the flash lights
causes a strong magnet
inside to move, generating five minutes of light.
"After explaining that
the magnet could affect
pacemakers, he prouddled the tour to see the
new units," says fish.
"All 20 of them - handing from the racks in the
tape library."

Big Red

It's 1984, and this nonhire IT pilot fish is getting up to speed on the aging minicome he's responsible for. But nobody explains the big, red button labeled "Emergency Power Cuoff Switch," so he fi asks. "It doesn't do anything," fish's trainer te him. "A few years ago, an inspection team com plained that there wasn't an emergency cutoff switch. We didn't have the budget to install one, so our boss bought a switch and had the s made, then goed in the spectors with Two."

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